

Amateur Radio

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WIA Centenary Year In Review



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Our Cover

The cover this month links back to our early history by reprising the cover used in March 2010. Using the same background, we have added some highlights from the Centenary celebrations during 2010.



Upper right: Leighton Moss VK3LJL operating VK7009WA from the EMERG Clubrooms Saturday evening 18 September 2010.

Upper right: L to R: Councilor Andrew Antonelli, IDRC President Michael Charteris VK4QS, Mayor Paul Pisasse Han Vice President IDRC, Mr Ewan McLeod VK4ERM, Director WIA with the Certificate of Appreciation from Ipswich City Council presented to the Ipswich & District Radio Club for community involvement and assistance in times of disaster.

Lower left: Dick Smith VK2DK and WIA President Michael Owen VK3GJ in the radio room of the Bonye Flying Club during the Centenary weekend of activities, May 2010.

Lower right: ACMA Chairman Chris Chapman speaking at the Centenary Dinner in Canberra.

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Contributions to Amateur Radio



Amateur Radio is a forum for WIA members' amateur radio experiences, opinions, and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back issues

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Photostat copies

If back issues are unavailable, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official views of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Emergency Communications Group

Coordinator Phil Wait VK2ASD

Members Ewan McLeod VK4ERM

Peter Young VK3MV

Editorial

Peter Freeman VK3PF

One year on...

Or should that be one hundred and one years on?

Our cover this month is a reprise of the cover from the March 2010 issue. That cover was based on historical photographs. This month, we have the same background, but have substituted a number of photographs from some of the activities that occurred during the Centenary celebrations.

Thanks to the efforts of the Centenary Committee, our lead article this month is an overview of activities during the past year. In itself, it will add to the archive of material that has been building, both of activities during the Centenary celebrations and from earlier years.

The Centenary year saw many separate events that combined to add to the celebrations. It is clear that the special callsign VK100WIA played a significant role, involving clubs around the nation during the six months of operation. These operations commenced with the WIA directly sponsored operations during the month of May, including the period around the Annual General Meeting and associated activities.

Many amateurs around the globe made the effort to qualify for the Centenary Award. A total of 438 certificates were issued for the Award. It was interesting to see a number of relatively recently qualified local amateurs become enthused by the award. They started to keep an eye on the on-line logbook to obtain hints as to when and where to find the VK100WIA callsign as it moved from club to club. Most of them assisted with the setup of the station when our local club was operating the callsign and booked in for the operating roster. I note that some of them achieved their goal - they are on the list of those who have gained the award.

Some time on air

I did manage to load the car up with gear for the Summer VHF/UHF Field Day. It took some time to find all the required items, as the unpacking after the move last year had not progressed well as far as the radio shack contents are concerned.

I did a small Rover operation, venturing to the region around the nearest grid square junction. The actual grid square junction is down in a gully system - not the best site for successful VHF and UHF operations. From the first site chosen I was able to make contacts with several local amateurs, on all bands from 6 m through to 3 cm, except for 13 cm - for some reason the transverter decided it did not want to work. It was then a matter of moving around to some other locations in adjacent squares and making as many contacts as possible. At the second location, I found that now 23 cm was not working, as well as 13 cm.

By late afternoon I had activated three squares and decided to head back closer to home to activate the home square, dropping into home to pick up my IC-910 so that I had 23 cm operational. After grabbing some food, it was off to a local hilltop to leisurely work whoever I could manage to catch.

Later in the evening I heard something of interest on 23 cm. It ended up being very interesting - I managed to work our 6 m contributor Brian VK5BC at his portable location at Cory Point on 1296 MHz. The contact distance was just less than 934 km, and set a new national mobile record for the band, as well as being a new square for the grid square collection. I gave up at around one in the morning and drove home to get some sleep. I went back to the hilltop the next morning to work a few more stations before heading home after the contest ended. It was a satisfying weekend of radio activity.

New look

By now, you should have noticed the new appearance of the magazine, thanks to the input from Sergio Fontana VK3SFG. Overall, the Publications Committee is happy with the new appearance and Sergio will continue to refine his workflow in an effort to meet new goals for delivery. Of course, we would welcome any comments from readers.

Cheers,

Peter VK3PF





WIA comment

Michael Owen VK3KI

Has the Foundation licence been a failure?

Once a year, we pull out all sorts of information for the annual Directors' Report and the report to the Open Forum following the Annual General Meeting.

This year it occurred to me that, as the first Foundation licensees were qualified in October 2005, we had now had full five years of the restructure of the Australian amateur licences and, more particularly, we now had five full years of the entry level licence.

So, it seemed a good idea to ask the question, has the Foundation licence been a failure?

One table that I have been building up is the total number of amateur apparatus licences in force on 30 June each year, extracted from the Annual Report of the ACMA, previously the ACA, showing total apparatus licences.

| | |
|--------------|--------|
| 30 June 2001 | 15,017 |
| 30 June 2002 | 14,536 |
| 30 June 2003 | 14,363 |
| 30 June 2004 | 14,047 |
| 30 June 2005 | 14,041 |
| 30 June 2006 | 14,475 |
| 30 June 2007 | 15,009 |
| 30 June 2008 | 15,278 |
| 30 June 2009 | 15,432 |
| 30 June 2010 | 15,626 |

It should be pointed out that the steady decline in numbers to 2005 had started many years before 2001.

There is a turnaround in 2006 and a fairly steady increase each year since then.

Now those figures show that there are actually much more than just a couple of hundred new licences each year.

Those numbers are the total apparatus licences in effect on the relevant date, and include amateur

repeater and beacon licences as well as licences held by people who hold more than one amateur licence.

But the number of amateur licences at the relevant date is the number after the removal of licences that have not been renewed or have been quarantined because of the death of the licensee.

So, before you have an increase in the total number of licences, the number of licences not renewed or quarantined has to be offset against the new licences.

If you look at the Directors' Report you will see that 88 callsigns were quarantined on the death of the licensee in the 2010 year. And neither ACMA nor the WIA is necessarily advised of the passing of all amateurs.

We also know from the families that contact us in relation to the renewal of WIA membership that a number of people's membership and licences are simply not renewed because of age and health.

So, really, while the total number of amateur licences may have increased by a couple of hundred a year, the number of new amateurs is more than just a couple of hundred in a year.

Since the WIA has qualified all amateurs since the restructure of the Australian amateur licences in 2005, we are able to throw some more light on the matter.

In each Directors' Report we have said how many people qualified for the Foundation certificate of proficiency in each calendar year, starting in 2006.

So, I can make a new table:

| | |
|------|-------|
| 2006 | 1,065 |
| 2007 | 743 |
| 2008 | 580 |
| 2009 | 541 |
| 2010 | 480 |

Without producing more tables, the WIA data shows that since 2005 the preferred entry route into amateur radio for the majority of amateurs is the Foundation licence, with relatively few first entering at either the Standard or Advanced level.

Our data also show that the number of Foundation licensees upgrading to Standard and Advanced is acceptable.

WIA Director Peter Young has analysed the WIA examination information, and other data that he could access, and concluded that since the introduction of the Foundation licence, the average age of radio amateurs had dropped, with many new amateurs being aged under 25.

Does the fact that for the last couple of years the WIA has been advocating the promotion of amateur radio to the general community with a view to attracting more amateurs mean that the Foundation licence is not working? Of course, we did not have to do much for the first few years, because the fact that an entry level licence would be introduced had been announced for quite a while, and so people were waiting for it.

However, we live in a world where many things clamour for people's attention, and amateur radio is just one of them, but at least we have something to sell with the entry level licence.

Let me look at another table, also from the Open Forum Report but with the latest figures in the Directors' Report, the membership of the WIA.

Continued on page 4

Result of nominations for Director announced

Nominations for election as a director of the WIA were called for by notice published in the December 2010 issue of the WIA magazine *Amateur Radio*.

The four retiring directors Michael Owen VK3KI, Peter Young VK3MV, Ewan McLeod VK4ERM and Philip Adams VK3JN1 offered themselves for re-election.

The WIA Returning Officer, Chris Chapman VK3QB, has advised the Board that no other nominations were received and in accordance with the Election Regulations, he had declared the retiring directors elected unopposed as Directors of the WIA.

Each will hold office until the conclusion of the Annual General Meeting in 2013.

Consolidated LCD now available

On 22 December last year the WIA advised that the ACMA had made amendments to the Amateur Licence Conditions Determination (LCD) and the Visiting Overseas Amateur Class Licence.

The amending documents have now been consolidated into the single basic documents by Office of Legislative Drafting and Publishing, part of the Australian Government

Attorney General's Department.

The WIA website provides access to both consolidated documents.

ACMA proposes changes to the Radiocommunications (Citizen Band Radio Stations) Class Licence 2002.

On 28 January 2011 the ACMA released a paper signalling its intention to vary the CBRS Class Licence. The paper follows consultation between the ACMA, industry and the public in the context of the ACMA's review of the 400 MHz band. The ACMA proposes to increase the number of radiofrequency channels in the UHF Citizen Band.

The ACMA proposes to vary the Radiocommunications (Citizen Band Radio Stations) Class Licence 2002 (the CB Class Licence) to facilitate operation on the new channels. Other proposed variations to the CB Class Licence include variations to:

- facilitate the transmission of electronic identification and location information;
- relax the duty cycle restriction for telemetry and telecommand transmissions;
- improve the regulatory effectiveness of the CB Class Licence;

- prohibit the indirect linking of repeater stations; and
- prohibit the linking of CB stations.

The proposed variations are discussed in the paper Proposed Variations to the Radiocommunications (Citizen Band Radio Stations) Class Licence 2002 which can be found on the ACMA website.

The WIA was represented on the ACMA 400 MHz Review Working Group by WIA Director Peter Young VK3MV.

NASA seeks amateur radio operators' aid to listen for nanosatellite's beacon signal

On Wednesday, January 19 at 1630 UTC, engineers at Marshall Space Flight Center in Huntsville, Alabama confirmed that the NanoSail-D nanosatellite ejected from Fast Affordable Scientific and Technology Satellite (FASTSAT). According to NASA, the ejection event occurred spontaneously and when engineers at Marshall identified and analyzed onboard FASTSAT telemetry, the ejection of NanoSail-D also has been confirmed by ground-based satellite tracking assets. NASA is asking radio amateurs to listen on 437.270 MHz for the signal and verify NanoSail-D is operating.

WIA comment

Continued from page 3

That table looks like this:

| | |
|------------------|-------|
| 31 December 2004 | 3,494 |
| 31 December 2005 | 3,851 |
| 31 December 2006 | 4,114 |
| 31 December 2007 | 4,302 |
| 31 December 2008 | 4,376 |
| 31 December 2009 | 4,541 |
| 31 December 2010 | 4,641 |

That table only goes back to December 2004, and tracks the membership numbers from the year of the restructure of the WIA from a federal organisation of state and territory based "Divisions" to a single national body.

Now what is interesting is that while there is an accelerated growth in the early period, the growth rather follows the growth of amateur licences.

Of course the rate of growth is not as fast as we would like.

But remember, exactly the same issues in relation to total licences apply to total members as against members dropping out. A steady increase in members is more new or rejoining members than it appears.

In short, despite the internet and mobile phones, I think that in Australia amateur radio is alive and well.

And I believe the Foundation licence has been successful.

A final thought. We have celebrated our Centenary. We are conscious of how amateur radio has changed in that time. As the world changes and as technology changes, amateur radio will and must continue to change, I suggest at an ever faster rate.

Amateurs should send information to the NanoSail-D dashboard.

NASA said that the NanoSail-D science team is hopeful the nanosatellite is healthy and can complete its solar sail mission. "This is great news for our team," said Dean Alhorn, NanoSail-D principal investigator and aerospace engineer at the Marshall Center. "We're anxious to hear the beacon which tells us that NanoSail-D is healthy and operating as planned. The science team is hopeful to see that NanoSail-D is operational and will be able to unfurl its solar sail." As of Thursday, January 20, the NanoSail-D dashboard is reporting that beacon data has been received, but NASA still wants amateurs to track and report the signals.

On December 6, 2010, NASA triggered the planned ejection of NanoSail-D from FASTSAT. At that time, the team confirmed that the door successfully opened and data indicated a successful ejection.

Upon further analysis, however, the team found no evidence of NanoSail-D in low-Earth orbit (LEO), leading them to believe NanoSail-D remained inside FASTSAT. The FASTSAT mission has continued to operate as planned with the five other scientific experiments operating nominally.

"We knew that the door opened and it was possible that NanoSail-D could eject on its own," said FASTSAT Project Manager Mark Boudreaux. What a pleasant surprise we had [Wednesday morning] when our flight operations team confirmed that NanoSail-D is now a free flyer."

If the deployment is successful, NASA said that NanoSail-D will stay in LEO between 70 and 120 days, depending on atmospheric conditions. NanoSail-D is designed to demonstrate deployment of a compact solar sail boom system that could lead to further development of this alternative solar sail propulsion technology and FASTSAT's ability to

eject a nanosatellite from a micro-satellite - while avoiding re-contact with the FASTSAT satellite bus. (Item courtesy ARRL)

UK Radio club celebrates Centenary.

RSGB reports that GB100D, Golf Bravo 1 Oscar Oscar Delta, has been issued for the year 2011 by Ofcom, the UK regulator, as a Special Event callign.

It will be used throughout the year to celebrate the 100 years of the Derby Wireless Club, founded in 1911, which is the UK's oldest continually active local wireless club and is now incorporated within the Derby and District Amateur Radio Society.

From 1 January to 25 March it will be operating from the "Silk Mill Museum" located in the City Centre of Derby alongside the River Derwent. The station will have restricted operation due to the museum opening hours.



A simple antenna base for portable vertical antennas

Graeme Scott VK2KE

This article describes a compact, cheap simple antenna base for portable antennas such as trap verticals like the Hidaka and the Hi-Gain 18AVT.

The idea occurred to me recently when I was to stay at Apollo Bay with friends and where the husband was getting into ham radio, having retired recently. I took the base with me in the car along with the Hidaka suitably dismantled into pieces that would fit in the car - stretched through from the boot to the front seat.

The base is made from pre-cut and threaded lengths of galvanised water pipe bought at the local plumbers supply depot. I used 25 mm (OD) pipe and you get seven pieces each 340 mm long with thread on each end. You will also need to get three tees that are threaded internally. The base is easily assembled as shown in the photos and the threads tightened up with a Stillson wrench.

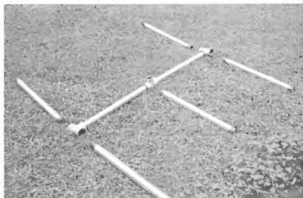


Photo 1: The antenna base disassembled to indicate the number of pieces of pipe.

Then the antenna can be attached to the base using a piece of a slightly larger size pipe that will drop down over the vertical one in the central tee.

Continued on page 9



The GARG VHF/UHF Field Day 2011 site.

We are into yet another year and it is already slipping away! My holiday in Tasmania seems eons away, a distant memory. One good thing about visiting Tassie was that I had a chance to meet Brian VK7BW who featured on a past cover of this magazine and was a great help in setting things up for the VK6RNS repeater at the NCRG headquarters in Whiteman Park.

I recently spotted news of activity in the Kalgoorlie area so I contacted the **Goldfields Amateur Radio Group** via their website and received this update from Ben VK6RM:

The Goldfields Amateur Radio Group (GARG) has become quite active once again. The club has relocated the 2 metre repeater VK6RAK to a new commercial site just outside of Kalgoorlie and connected it via EchoLink (53116) and IRLP (6089). Coverage from the repeater now extends down to Kambalda and out west of Coolgardie.

APRS is now active in Kalgoorlie. Just this week a Tx/Rx I-gate has been installed, with digipeaters on their way, to give APRS coverage of the Goldfields. Future plans are

to supplement these with DPRS equipment until a D-STAR repeater is installed in the area.

GARG is seeking members! Currently GARG has six very active members, however we need to increase this number to incorporate the club and become affiliated with the WIA. Hopefully we can get some interest from some non active amateurs in the area to get back on the air and join in with the club and its planned activities. To help interest in this the club hopes to resurrect the 'Hainault's Reward' contest; in the past any amateur making contact with the entire GARG group via any mode has been eligible to receive the commemorative QSL card. GARG contact details are via their website www.garg.org.au or email to vk6rm@garg.org.au

GARG Summer VHF/UHF Field Day 15/16 January, 2011

On Saturday 15 January three members from the GARG ventured south, towards Esperance, in the hope of netting some QSOs from across the Bight. Preparations started well ahead of the event, with Des VK6HDM and Stuart VK6LSD constructing some very good home

brew antennas including a four element two metre quad that gave absolutely outstanding performance. Also a two metre linear, kindly lent by Lewis VK6OI received a much needed tune up and was restored to its full 200 watt output.

Originally the location selected to set up the portable station was on top of Cape Arid, east of Esperance; however an alternative location was selected at Alexander Bay, approximately 60 km east of Esperance. This ended up being quite a good call, with a cleared hilltop location being found right on the water where the views were excellent and this, along with favourable ducting forecasts boosted hopes of many VHF contacts to be made.

As the antenna farm was erected Stuart and Des, being keen home brewers, were somewhat unappreciative of Ben VK6RM's efforts, where after much head scratching his new factory made tri band Diamond V2000 antenna was in the air, and the cable length issue causing VSWR problems on six metres was also rectified. Ben was disappointed to be told that assembling a factory built antenna was not quite 'home brewing'. None the less the simple 2.15 dBi vertical antenna proved to be an excellent performer on six metres.

During the Saturday afternoon many QSOs were made on six metres, with 59 signal reports being received from all over Perth, to Karratha and into Melbourne. Despite constant calling no contacts were made on two metres or 70 cm until late into Saturday night. Just as the guys were about to call it quits for the night a contact was made into Adelaide with an F call station that was mobile on FM. This gave new hope to the possibility of gaining some high value two metre QSOs; however very late into the evening the only other QSO was a 59 report into Adelaide on SSB.

Despite many more numerous attempts, no other QSOs were made for the field day!

Exhausted and ready for a decent night's sleep the guys packed up early Sunday morning and made the trip back to Kalgoorlie. A great weekend was had by all and the Winter Field Day should see more of the GARG members attending. The attached photo shows the field day site.

Well done guys, it is great to hear of things happening in Kalgoorlie other than mining!

As I am writing this I have just received an email sadly telling me that Mick VK6IN (formerly VK6YXL) has passed away after a battle with cancer. Mick was a good friend, a club member and my local Sparky who did all my jobs around home. Apart from the fact he was a Cockney, he was one of the nicest guys I have ever had the pleasure of knowing. He is the third club member we have lost recently and none of them can be replaced. Vale Mick VK6IN. More next month.

A reminder that the **Hills Amateur Radio Group** will be holding HargFest on Saturday 9 April at the club rooms in Sanderson Road, Lesmurdie, so put the date in your phones/organisers or even diaries and contact Marty VK6FDX on 04 4738 2963 or email at marty.martin@bigpond.com to book tables and for more information.

It is almost three years since I took on writing this column and at times it has been like getting blood out of a stone extracting information from the various groups around the state. However things are improving, more club secretaries are supplying updates and future activities which has made the job easier. I have had to reassess my time-poor life with the impending sale of most of my business, an upcoming overseas trip and taking on the role of WIA National Awards Manager.

I have decided that next month's column (April) will be my last and I am looking for a replacement columnist. If you would like to take on the role

and provide VK6 with a monthly update that was sadly missing for many years please contact me direct at vk6rk@wia.org.au

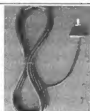
That about finishes off things for March, the contest season is upon us so I will be busy at VK6NC as much as possible, and it will not be long until National Field day is upon us at its new time in April. Hopefully your club will be able to successfully promote the hobby to the general public and your members are looking for ways to do that this year. The NCRG is hoping to be able to participate this year as it is no longer slap dab in the middle of the October contest season. Plans are afoot to stage something, so hopefully we will also be able to put on a show.

In closing, please consider if you can take on this role as VK6 columnist as I will not be continuing past month's column.

Vy 73 es gud dx, Keith VK6RK.



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Tim Mills VK2ZTM

vk2ztm@wia.org.au

The next **Urunga Convention** is scheduled to be held over Easter. It has been a continuous yearly activity since 1948. This will be followed by the **Oxley Region** annual field day over the June long weekend at Port Macquarie. There are other major events in Port over the same weekend and accommodation will be scarce. If you need it you should book now. Over the October long weekend the **Oxley Region ARC** will be celebrating their 40th anniversary.

A memo to all clubs and groups with listings on both the ARNSW and WIA sites: You need to check and keep the details up to date as many refer to these sites for information and contact details.

The second of the WIA Emergency Communications training weekends in VK2 will be held on 9 and 10 April at the ARNSW Dural site. The first weekend was on 19 and 20 February.

The **Orange and District ARC** turns 50 this year and they will be celebrating from this month until the end of June with special call V150AOA. Also starting last month they will be meeting at the Orange SES. Late January the **Mid North Coast ARG** held their annual Expo which went off well, reports President Jack VK2CJC. Some previous exhibitors were unable to attend due to the flood problems in VK4 and VK3. They were not directly affected but their personnel were involved with the flood recovery. The hall was still filled up including first time attendee Les VK2MPZ with his Amateur Transceiver Radio Centre from Sydney. Others attending included Ludatronics, Syncro Australia, Coffs Harbour & D ARC, Coffs Harbour Marine Rescue,

CREST, Urunga Radio Convention, Summerland ARC and Oxley Region ARC. Some changes had been made with the kitchen and there were small tables and chairs in the hall to enjoy the 'cuppa'. The annual **Central Coast Hamfest** was held at Wyong Racecourse at the end of February.

An early announcement that the **Riverina Field Day** will be held on Sunday 31 July at the Lavington Scout Group Hall, with a 10 am start. The event is arranged by the Albury Wodonga ARC. Contact Tony VK2MY by email: sanders_01@bigpond.com

The Secretary of ARNSW Norm VK2TOP has advised that the AGM will be held on Saturday 16 April 2011 at 63 Quarry Road, Dural with a 10 am start. The Returning Officer Peter VK2EMU has advised that the close of nominations for the next committee will be at midday Saturday 5 March 2011 at the VK2WI Dural site. Members of ARNSW are reminded that they need to ensure that they are financial prior to 16 April. They can check by email to membership@arnsw.org.au and also can use the same address to advise any recent changes to postal or email details. Annual reports are sent to most members by email. Others will be sent by post, so it is important that your details are correct.

A course will be starting this month at the **VK2WI Dural** site for all licence grades. It will be conducted by Terry VK2UX on Monday evenings, 7 to 9.30 pm. Registration and inquiries to the ARNSW office phone 02 9651 1490 or mobile 0400 445 829. Details will also be given in the VK2WI news bulletins or in the text edition on the ARNSW web site.

The operator provided Morse

sessions from **VK2BWI** resumed for the year in early February. These are conducted by Ross VK2ER from Orange on behalf of ARNSW. Look for the session on 3550 kHz Thursday at 2000 hours. Do you have an interest in the mode and would like to help? Give Ross a call back after the session. At other times there is the VK2WI automatic CW transmission on 3699 kHz except during Sunday broadcast times and when there is other operation from the Dural site on 80 metres.

VK2 reverts back to standard time next month and while **VK2WI News** maintains the same local time there is the shift in UTC time. HF conditions for the bulletins continue to be difficult, but are helped by the use of the channel on 5425 kHz USB in the morning which provides a link for the remote relay stations. The text version of the VK2WI News is available on the ARNSW web site from Monday www.arnsw.org.au. Thanks to Jack VK2XQ who provided the 6 metre DX report over the summer period. The next quarter roster for the Broadcast team will be made up this month by John VK2JV who is always on the lookout for additional personnel. Joining the team this year is Peter VK2BEU.

The next Trash and Treasure event at the Dural site will be the last Sunday of this month – 27th. Les VK2MPZ of ATRC has plans to attend with a range of equipment. Major T&T items on offer can be viewed on the ARNSW web site www.arnsw.org.au under Disposals.



A simple antenna base for portable vertical antennas

To obtain stability in a wind, lengths of pipe or dowel can be inserted either inside [or over] the legs as shown in the photo to keep the base steady on a windy day. Alternatively, sand bags or the like could

be dropped over each leg to weigh them down. Another alternative would be to have some slightly longer pieces of the same size pipe and using some sockets [or couplings] they could be screwed onto each leg to increase stability in the wind.

When the portable station is closed, the base can be unscrewed leaving the three tee pieces joined together as they are not very long and can be stowed in the car easily thus minimising the number of pieces of pipe rolling around in the boot.

Four quarter wavelength radial wires can also be attached to the base legs with alligator clips to improve the efficiency of the antenna when on air.

We used this base with the Hidaka trap vertical recently to demo HF to my friend (VK3FAJW) who is now upgrading to the Standard licence from his initial Foundation level. While portable, we worked a VK7 in Hobart and a VK3 in Bairnsdale on 7 MHz with good signals and we had not even added any radials to this configuration! He was suitably impressed with HF and he now has more experience with operating procedures, especially in a net with a few stations, some of which we could not hear.

I also wanted to demonstrate to him the ability to use a trap vertical as he has a very small block in Melbourne. I think the point has been made!



Photo 2: The antenna base assembled with all legs screwed in place

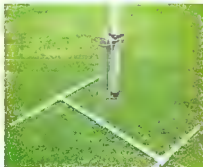


Photo 3: The antenna base with the Hidaka vertical fitted to the base using a slightly larger piece of pipe



Photo 4: The old yellow welded base that was very hard to stow in the car.

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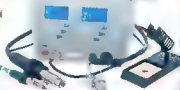


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Spotlight on SWLing

Robin L. Harwood VK7RH

It is March already and I have just received some grim news. The BBC World Service has immediately axed several language services and stopped broadcasting English to another major target area. Language services axed include Albanian, Macedonian, Portuguese for Africa and Serbian. Shortwave programming will also cease in the following languages: Azen, Mandarin Chinese (note that Cantonese radio programming continues), Russian (save for some programmes which will be distributed online only), Spanish for Cuba, Turkish, Vietnamese, and Ukrainian. These languages will continue online but as has been pointed out, the Chinese have effectively blocked out the BBC's Chinese website. It sounds as if the BBC will primarily target the worldwide Chinese diasporas outside of the mainland.

There are further reductions in shortwave distribution coming into effect on the last Sunday in March with Hindi, Indonesian, Kyrgyz, Nepali, Swahili and the Great Lakes service (for Rwanda and Burundi) all being taken off as well as further reductions in English. Apparently other platforms will be used to distribute BBC World Service programming such as the Internet, cell phones plus relays from domestic partners. All BBC World

Service shortwave transmissions are planned to cease entirely by March 2014 with the exception of Somali and Burmese.

The BBC expects that these cuts will shrink the 180 million audience by 30 million. Also there are job cuts and a reduction in the BBC's online output. It looks as if Bush House will close in 2012 and the BBC World Service will go entirely to a rolling news format and be relocated to Broadcasting House. The separate BBC World Service news team will be merged with the domestic BBC News with further job cuts. Naturally the National Union of Journalists (NUJ) has reacted angrily to the proposed cuts. These have been brought on by a reduction in government funding and a change in how the remaining funding is allocated.

Sadly the grim news does not end there. The VOA has also axed several language services including Indonesian as well as a further reduction in shortwave output. DW in Cologne also has axed shortwave programming with the aim of leaving HF entirely. The Radio Netherlands relay station in Bonaire is also going to cease as from October 2012. RNW's Head of Programme Distribution, Jan Willem Drexhage, said the closure was regrettable, but stressed that this was a financial

decision, and does not mean that RNW has imminent plans to drop shortwave. They will probably continue from French Guiana or Madagascar. Radio Prague also left shortwave on January 31, joining Radio Slovakia who ceased at 31 December 2010. The latter continued to be relayed by WRMI in Florida on 9955 but suffered continual jamming from Cuba as WRMI broadcasts anti-Castro programming at other times.

Some of you may remember the original "DX Partyline" from HCJB in Quito, Ecuador when it was hosted by Clayton Howard. It was without doubt the best DX program on shortwave and I have fond memories of listening into it in the 70s and mid 80s. Clayton died at the end of January, aged 92. His cheery voice will be missed. Another shortwave voice also died in January in Moscow: Carl Watts, also known as Karl Egorev, was a regular announcer and host on Radio Moscow both in its North American Service and World Service. He was born in Canada to Ukrainian immigrants but they fled back to Russia in the mid 50s at the height of the McCarthy era.

You also heard that VOR is also phasing out shortwave? Oh it has been a depressing month!



Don't forget:

John Moyle Field Day on March 19 and 20

National Field Day on 17 April 2011

World Telecommunication Day on 17 May

VK3news

Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC



Nik VK3BA with Gavin VK7VTX.

The year 2010 was punctuated by a number of positive events both in the WIA Field Day successes and local club house achievements; but was marred by the tragedies of the untimely passing of Jennifer Cole, wife of Ian VK3HAJ, Alys Jones wife of our President Dallas VK3DJ and long time member Jack Cations VK3ALP.

GARC in the PARK

The last activity in the GARC calendar for 2010 was the now well established GARC in the PARK, held at the Geelong Eastern Gardens, Rotunda. The organisation of this event was down to Jenni VK3FJEN as to who was bringing what food and drinks. Amongst the attendees was Gavin VK7VTX a previous member of the club now resident in Flinders Island. This annual event is also attended by the Geelong Radio and Electronic Society.

Introducing VK3ROW

Ken VK3NW, Shaun VK3VLY and Nik VK3BA have re-installed the VK3ROW Otways/Beech Forrest 2 m repeater on 147.275 MHz. From reports thus far, it seems to be working very well. Early examples of its foot print were from Ron VK3FTFM at Caramut, Leigh VK2KRR at The Rock (near Wagga Wagga), Lou VK3ALB at Drysdale

and Greg VK3UT at Warrnambool.

The diplexer has been re-tuned and new tails fitted, the old repeater was ditched and replaced with a Motorola MTR2000, it runs the best part of 40 W into the diplexer, has a CTCSS encode and decode of 91.5 Hz, a three minute TOT and the encoder is disabled

during the CW identification period. It is configured exactly the same as the new VK3RGL 2 m repeater on 147.000 MHz that we have been enjoying for the last year. Also involved in this project were Peter VK3WK and Bert VK3TU.

The GARC now supports five repeater stations VK3RGL on 147.000 MHz, VK3RGC on 147.125 MHz, VK3ROW on 147.275 MHz, VK3RGL on 147.000 MHz and VK3RNP on 438.175 MHz (D-STAR).

In addition it also supports two beacons VK3RGL on 144.530 MHz in QF22DC and VK3RGL on 432.530 MHz in QF22DC; both beaming alternately West and North East.

Lee VK3PK with Max.



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How to aim an antenna with the Internet and the sun

Erich Heinzle VK5HSE

Introduction

Recently faced with the problem of aiming a new digital antenna at the local television transmitter, and relying on knife edge diffraction for the signal, aiming at the tower visually was not possible. Being a radio amateur, I was too cheap to buy a digital signal strength meter, and too lazy to find a compass.

This is a worked example of how an antenna, or anything else for that matter, can be pointed simply and accurately using little more than the sun and the Internet. Celestial navigation underpins the technique, and the Internet provides the data and calculations required.

The same general techniques can also be used to determine the bearing towards a specific target, such as true North, or perhaps a mobile APRS transceiver which is broadcasting its location. The aiming of earth-moon-earth (EME) antennas also relies on the same fundamental techniques.

Used in reverse, the technique can also be used to determine the alignment of an existing structure. Elements of the technique may also be worth doing with scouting groups as an educational exercise.

Determining your QTH

The first step is to establish the latitude and longitude of your planned antenna, which we will call Antenna A. This can be easily determined with an internet based mapping tool, such as Flash Earth or Google Earth.

Flash Earth (<http://www flashearth.com>) is a Flash based world map which allows you to zoom in to the point of interest and read off latitude and longitude simply by using a web browser. Alternatively, Google Earth software can be downloaded and installed. Of course, if you have a GPS receiver, you can determine your latitude and longitude with it instead.

If you end up with decimal numbers instead of hours, minutes and seconds,

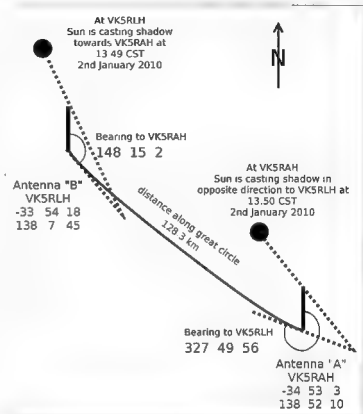


Figure 1: Using the Sun to aim an antenna

you can convert them at <http://www.satsig.net/degrees-minutes-seconds-calculator.htm>. You will need the coordinates for Antenna A in degrees, minutes, seconds format for the final step, when you are interpreting the table of sun positions.

For our example, we will use the latitude and longitude of the VK5RAH Lobethal repeater:
Latitude: -34° 53' 3"
Longitude: 138° 52' 10".

Determining your target

The next step is to establish the latitude and longitude of the antenna you are aiming at, which we will call Antenna B. Again, this can be done using Flash Earth, or simply from the person at the other end, or by looking up published details if it is a repeater, such as with a web based directory, that is, <http://k5ehx.net/repeaters/qrepeater.php>

For example, we will assume Antenna B is the VK5RLH Central North repeater:

Latitude: -33° 54' 18"
Longitude: 138° 7' 45".

Finding the bearings and distances

Once you have the latitude and longitude for antenna A and B, you can use one of a number of web based calculators to determine the distance between the locations, and more importantly, the initial and final bearings along the great circle joining the two locations. A convenient one to use is: <http://www.movable-type.co.uk/scripts/latlong.html>

Owing to the fact that the earth is a sphere, spherical geometry comes into play. The shortest distance between two points on a sphere is a great circle, and the bearing you start on relative to North (the initial bearing) will

not always be the same as the bearing you finish up on (the final bearing) relative to North as you arrive at your destination.

To aim Antenna A at Antenna B, the initial bearing is what is needed. For our example, VK5RAH aiming at VK5RLH, after entering the coordinates, and clicking the 'calculate distance button', we get:

128.3 km

and, after clicking the 'calculate initial/final bearing' further down the page:

327°49'56" the initial bearing from VK5RAH to VK5RLH, and
328°15'02" the final bearing from VK5RAH to VK5RLH

If we swap the Antenna A and Antenna B around, that is, going in the other direction, we get:

148°15'02" the initial bearing from VK5RLH to VK5RAH, and

147°49'56" the final bearing from VK5RLH to VK5RAH

Which, as expected, is the exact opposite of the results for the other direction, that is, the difference is 180 degrees.

Having established the initial bearings along which Antenna A and Antenna B need to be aimed, all that remains is to point the antennas along those bearings.

Where to aim the antenna(s)

There are two ways to do this. One option is to use a compass, but the accuracy of this will be affected by magnetic deviation, nearby magnetic structures, and a very tiny bit by geomagnetic storms!

The more interesting way to do it is to use the Internet again, to predict the sun's position. A handy solar position calculator is provided by the US Navy: <http://aa.usno.navy.mil/data/docs/AAAz.php>

You will need to go to 'Form B - worldwide locations'.

Select the sun position checkbox, as well as the date for which the sun's position relative to north (the Solar Azimuth) is to be calculated, and choose one minute intervals for the generated table. For our example, we will use 2 January, 2010.

You will need to add one hour to the time zone offset if it is daylight savings. In this case, we will use 10.5

hours for Australian Central Standard Time in mid-summer.

You will then need to enter the latitude and longitude you found for Antenna A. Then press the 'Compute Table' button.

Which way will the sun cast a shadow?

In the southern hemisphere, if the initial bearing is between 270 degrees and 90 degrees, that is, pointing in a generally north direction, then you will need to aim the antenna towards the sun or, in the opposite direction to the mast's shadow. For our example, the initial bearing from Antenna A to Antenna B is 327°49'56", that is between 270 and 90 degrees, so the antenna will need to be pointed towards the sun and we will need to find the time that the sun's azimuth will be 327°49'56". This can be converted to decimal degrees, giving 327.832 degrees as our Solar Azimuth goal.

In the southern hemisphere, if the initial bearing is between 90 degrees and 270 degrees, that is, pointing in a generally southwards direction, you can aim towards the mast's shadow, when the sun is at the initial bearing minus 180 degrees. This is not the case for Antenna A, but it is the case for Antenna B.

If the sun is to cast a shadow in the direction of Antenna A, along the initial bearing from Antenna B, it will need to shine from the initial bearing minus 180 degrees.

So, with the initial bearing from Antenna B to Antenna A 148°15'02", that is, between 90 and 270 degrees, the sun's azimuth to cast a shadow in this direction will be:

$$148^{\circ}15'02'' - 180^{\circ} = 328^{\circ}15'02''$$

This can be converted to decimal degrees, giving 328.2506 degrees as our Solar Azimuth goal.

When to look for the shadow

We now look at the table of solar positions generated by the calculator and find that 13:50 CST with daylight savings in effect is the time at which we must aim Antenna A in the direction of the sun, to achieve a bearing of 327°49'56", and 13:49 CST with daylight savings in effect is the time at which we must aim Antenna B in the direction of the shadow cast by its mast, to achieve a bearing of 148°15'02".

Troubleshooting

If you are getting strange results, double check your latitude, longitude and UTC offset. If you cannot find a time of day matching the required azimuth, it is probably because the sun has risen or set too early, for example in winter, in which case you will either have to wait a few weeks, or wait until the sun is at ninety degrees to your antenna's required bearing and line up an antenna element (if it is a Yagi), with the mast shadow.

Having established the right time of day to aim towards the support pole's shadow, or aim in the direction of the sun, that is, opposite to its shadow, you only need to have the right time. If you have a GPS receiver you have an accurate clock already. In the absence of a GPS receiver, you can use an online time tool such as:

<http://www.timeanddate.com/>

All you have to do now is sit and wait, and hope for sunny weather!

Concluding Remarks

The technique assumes your antenna mast is vertical, and that it is daytime. As a bonus, the US Navy calculator will also allow you to tabulate the position of the moon minute by minute. It turns out that you can also aim Antenna A at the moon at 4:16 am, and Antenna B at the shadow cast by the moon at 4:14 am. According to the table generated it will be 99% illuminated - a full moon!

None of the websites listed is unique. A simple web search will find multiple sites providing calculators, converters, maps, time, and solar position calculators. Another good solar position calculator is provided by NOAA, the nice people who look after the weather satellites many amateurs tune in to:

<http://www.srbb.noaa.gov/highlights/sunrise/azel.html>

The NOAA web site is a bit quirky and requires a minus sign for eastern longitudes, southern latitudes and eastern UTC offsets. However, it will let you resolve the sun's position down to the second.

I nearly forgot - one last tip - do not stare or look directly at the sun!



Across the Tasman on 2.4 GHz

David Smith VK3HZ

After many years of trying, the gap between the Australian mainland and New Zealand has finally been bridged on 2.4 GHz.

On 27 January, 2011, at 0326 UTC Adrian VK4OX worked Stephen ZL1TPH/p on 2403.1 MHz SSB over a path of 2314.5 km. Adrian is located about 20 km inland from Caloundra on the Sunshine Coast, while Stephen was operating portable from Moirs Hill on the coast to the west of

Auckland. They exchanged 5/3 reports both ways.

Stephen ZL1TPH takes up the story: Looking at the Hepburn propagation maps that afternoon (see Figure 1), band conditions did look exceptionally promising from northern ZL towards VK4 with indications of a strong tropospheric duct running almost the full way across.

I looked on the VHF logger for further information. The Logger is an invaluable tool and we thank Adam VK4CP for providing these services to all amateurs. Seeing Adrian VK4OX on the Logger and knowing that he had high performance gear for the 2.4 GHz band, I decided to load up my 2 metre and 2.4 GHz equipment into my work vehicle, so as to operate portable from a nearby elevated site called Moirs Hill. This site is at 352 metres ASL and has an excellent take off towards VK, and was only a short drive north from my home QTH.

Once on site, I set up my 144 MHz station - a TS-700A feeding a 250 watt SSPA and eight element 2 metre horizontal Yagi - and operated from the rear tailgate of my vehicle. The weather conditions were extremely warm, with no winds whatsoever. Within the first few CQ calls on 2 metres, I worked VK4APG and VK4OX at 5/9 on SSB and this pointed to conditions as being much enhanced.

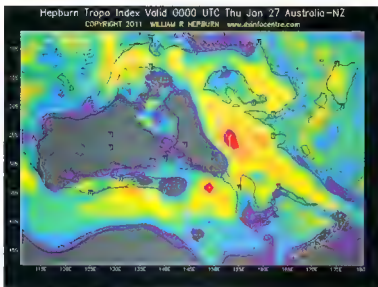


Figure 1: Hepburn Chart shows strong enhancement.

With my initial carrier down on 2403.1 MHz, Adrian VK4OX reported it as very weak. This was confirmed by switching off the carrier at my station. My concern at this point, I was not sure exactly where to point my dish. I asked Adrian to provide his CW keyer to me for dish alignment at my end.

Adrian and I then decided to test 2.4 GHz. Firstly my 1.15 metre dish was set up. This attaches to my 2 metre antenna mast, which is attached to my tow ball. This dish is fed with the dual mode, 23 cm and 13 cm loop feed as described in a recent DUBUS article. From the rear of the dish, a short length of low loss coax is used to connect to the 2.4 GHz transverter placed also on the tailgate, beside my TS-700A 2 metre radio.

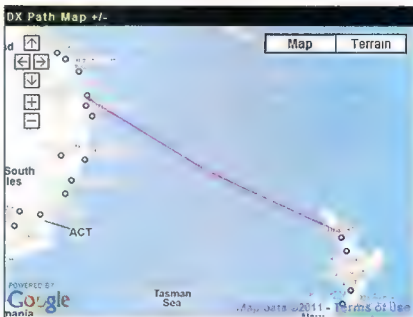


Figure 2: A Rare Sight - 2.4 GHz between VK4 and ZL.

At first I heard nothing, but a few seconds later it came out of the noise on a QSB peak. I quickly panned my dish and his CW signal was now very strong indeed, my dish was now locked on his signal and I continued to watch my S meter in disbelief. Once he switched off his CW keyer, I called him on SSB and completed the QSO and then chatted. We also, of course, logged the contact on the VK Logger (see Figure 2).

My 2.4 GHz transverter is mainly home brew, with kit modules mostly from VK. The transverter itself is from Mark VK5EME of Mini-Kits, along with one of his earlier 1-2 watt PAs and his current 13 cm preamp. TX power is then fed into a VK5KK signal stage GaAs FET PA, which David produced many years ago. Then into two surplus 75 watt Spectrian power modules which are combined with W6PQL 13 cm combiners. The 144 MHz IF radio to the transverter at the time was an ICOM IC-202. I decided not to use my FT-817 at the time. It was a great contact to Adrian VK4OX, on 2.4 GHz that afternoon at 2314.5 km.

Adrian VK4OX writes:

This contact was not pre-arranged. I was watching the logger and Steve ZL1TPH just posted a comment to say that he was going out to RF73hm and would take 144 MHz and 2403 MHz gear. He would not have logger access while portable. 144 MHz had been open across the Tasman for over 24 hours but I thought it was better the

previous day at around 0500 UTC when I worked ZL1AVZ on 144 MHz and heard him on 1296.1 MHz very weakly. No two-way QSO was made on 1296. There were very few ZLs on, so I thought the band was dying.

ZL1TPH/p was very loud at times on 144.300 but took the occasional dive close to the noise floor. 2403.100 was exceptionally good - some QSB, but strong peaks. I managed to record the QSO and the audio file can be found on the VK Logger at http://www.vklogger.com/docs/zl1tph_vk4ox_13cm.mp3

I was running about 20 watts at the feed of a 24 dB Gridpack antenna about nine metres off the ground. I have a VERY good QTH for working across the Tasman. The QSO would not have happened without the logger. The immediacy of the information allowed everything to be set up pretty much on the fly. Alas, I do not have any pictures. All my gear is old technology and my only camera is still a box Brownie. I cannot remember when I last bought a roll of film for it! I do not think I can any more.

This contact established a new national distance record for the 13 cm band of 2314.5 km, eclipsing the previous record of 1885.5 km set way back in 1978 by VK5QR and VK6WG. Unfortunately for Stephen, his record was not to stand for too long as the following morning, Adrian then further extended the record by working Brian ZL1AVZ to set a new record distance of 2317.5 km.



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As always, you can get a free catalogue - just call!

The Darwin Invitation

The members of the Darwin Amateur Radio Club are very pleased that the WIA Board accepted its offer to act as the host club for the 2011 WIA Annual Conference.

On behalf of all the amateurs in the Top End I want to invite you to come to Darwin in May for a great weekend with us.

Come and see what it is all about.

Meet with other amateurs from all over Australia.

Have a barby and above all else have fun.



Spud Murphy VK8ZWM

President

Darwin Amateur Radio Club



Bookings are now being taken!

Bookings are now being taken for the WIA Annual Conference Weekend in Darwin. Don't delay your preparations, as travel / accommodation opportunities are limited.

You can now register on-line at the WIA website, or you can register by phone to the WIA office or by completing and mailing, faxing or even hand delivering to the WIA Office the Registration Form that accompanies this edition of AR (it is on the reverse of the address sheet).

A registration fee of \$75 will be charged. That fee will include morning tea, lunch and afternoon tea on Saturday, transport for Friday evening and, for partners not participating in the AGM/Open Forum/Symposium, a tour of Darwin.

Other costs are:

| | |
|--|------|
| Darwin Sunset Dinner at Darwin Trailer Boat Club Friday night: | \$55 |
| Annual Dinner, Saturday night | \$50 |
| Litchfield National Park tour and BBQ, Sunday | \$55 |
| Mindil Beach Sunset Market, Sunday evening | \$8 |

(You can buy food at the Markets)

Program

Friday 27 May 2011

| | |
|--------------|---|
| 2 pm to 5 pm | Registration at Travelodge Miramabeena |
| 6 pm | Darwin sunset over Fannie Bay at Darwin Trailer Boat Club, with a buffet dinner |

Saturday 28 May 2011

| | |
|------------------|--|
| 8 am to 9 am | Registration at Travelodge Miramabeena, with welcome tea and coffee |
| 9 am to 12.45 pm | Annual General Meeting and Open Forum, Miramabeena Room |
| 1 pm to 1.45 pm | Lunch Treetops Restaurant |
| 2 pm to 5 pm | Symposium - Technology for the Bush, including the Centre for Appropriate Technology |
| 6 pm to 7 pm | Drinks |
| 7 pm | Annual Dinner, Treetops Restaurant |

A Partners Tour will be available for Saturday, including visits to some of the highlights of Darwin. The cost of that tour will be included in the registration fee.

Sunday 29 May 2011

| | |
|--------------------|--|
| 8.30 am to 4.30 pm | Tour to Litchfield National Park, including a visit to the termite mounds, Buley rockhole, Florence Falls, with a BBQ lunch and plenty of time at Wangi Falls. |
| 6 pm | The Host Club's event - Mindil Beach Sunset Markets, in a special area. |

When you register, we will send you the Essential Top End Holiday Guide, so you can plan what else you will do and then we will also send you, shortly before the Annual Conference, the Open Forum documents.

Accommodation

There are many attractive hotels offering accommodation in Darwin. The WIA has negotiated a special deal with the Travelodge Miramabeena.

A Standard guest room, with 2 queen beds, for two people, including two buffet breakfasts at \$160 per night.

Executive Room, with a king bed or two single beds, for two people, including two buffet breakfasts at \$180 per night.

Townhouse, self contained, with kitchen and extra beds, for two people, including two buffet breakfasts at \$190 per night.

Travelodge will only hold rooms for the WIA until 30 April 2011.

The earlier accommodation is reserved, more rooms will be made available.

To book:

Call Travelodge Miramabeena at 08 8946 0111 and speak to Aleishia Good or Belinda Anthony, quoting the **WIA Conference**.

Julian Sortland VK2YJS has kindly given us the benefit of noting some of his travelling experiences to Darwin. Some of these include:

As you are hopefully aware, the WIA AGM and associated activities are scheduled for late May in Darwin. You may be wondering if the trip will be worthwhile. I have travelled to Darwin five times since October 2004 to attend a series of conferences for the Library industry, and always had an interesting and pleasant trip, and found the participants friendly. Even during this time the city, especially the CBD and close-by have developed significantly.

The NT is on Central Standard Time (CST) year-round, at UTC+9 1/2 hours.

I have stayed at the Value Inn in Mitchell Street and at the Cavanagh, in Cavanagh Street. The Value Inn is affordable and has free parking. It has a small pool, and access to the larger pool complex at the Melaleuca on Mitchell next door. "The Cav" has somewhat nicer rooms, but access is through the noisy, and often smoky pool area. There are also some very up-market hotels. Several hotels are located in "The Gardens", which while pleasant, is to the north of the Stuart Highway, and so quite a walk from town. Other options range from back-packer hostels to luxury hotels. I have often used the wotif.com website to make bookings. There are also caravan parks along the Stuart Hwy.

There is a motel and a resort at the airport. However, given the lack of route buses, unless you hire a car, taxi fares will soon add up.

The newly developed Wharf Precinct features both an enclosed artificial beach (free) and a simulated surf beach, for which admission is charged. These are within walking distance of the CBD, with the lift down from street level the easiest option. There is some parking. This area also features the WWII fuel storage tunnels which can be toured for a small charge.

WWII Memorials. The park to the west of city, overlooking the harbour, features many plaques commemorating ships and their crews, including many sunk during WWII. There are many other sites around Darwin.

Markets. As well as Sunday nights, the Mindil Markets run on Thursday evenings. They are very much a multi-cultural experience, with a wide range of foods from around the world. There are also handicraft and souvenir stalls. As sunset approaches, be sure to have your camera ready, as once the sun "touches" the water, it disappears within a minute. There are a number of other markets in Darwin over the weekend.



Australian Aviation & Heritage Museum - Photo courtesy of Tourism NT

These are Palmerston markets on Friday nights, Coolalinga and Parap on Saturday mornings, Rapid Creek early Sunday mornings and Nightcliff late morning and early afternoon. It should be possible to get breakfast at the Parap Village Markets before the Saturday events.

Australian Aviation & Heritage Centre. Located on the southern side of Darwin Airport, this museum houses a range of aircraft, including

the only B-52 bomber in Australia (a B-52G), Spitfires, Japanese aircraft, a Mirage, a Huey and a DeHavilland DH 104 Dove from Timor, plus operational and stationary engines, uniforms, displays and a collection of valve radios.

Parap. Located a short drive north-east of the City, Parap features the original Qantas Hanger, housing an Automotive Enthusiast collection, and various aviation material. Parap Village is home to Parap Fine Foods and Arafura Catering Equipment. There are a number of restaurants, including the Happy Garden Chinese restaurant.

East Point Military Museum is another WWII historical site, and includes some interesting gunning emplacements.

Repeaters. There are a number of repeaters in the Darwin area, including FM repeaters, some IRLP-linked, and D-STAR devices. All give coverage throughout the Darwin region. All repeaters use the traditional offsets. Co-sited FM repeaters appear not to be linked. All D-STAR repeaters are gateways. Remember to suffix your callsign with "portable 8". It may be best to put your hand-held on a laptop tray when going through airport screening. VX-7R antennas evidently appear pointed if left inside your bag.

Portable operation on HF or 6m may provide some interesting contacts into South-East Asia or beyond.

The full text version of Julian's travel notes is available to all registrants upon request. Thank you Julian.



Darwin Wharf Precinct - Photo courtesy of Tourism NT



Hills Amateur Radio Group (HARG)

Richard Grocott VK6BMW

Secretary, HARG Inc



Photo 1: A photo montage of the HARG John Moyle Field Day 2010 activities.

John Moyle Field Day 2010

CQ Contest, CQ Contest, CQ Contest, The John Moyle is on again. Field day! Pick a spot in the hills away from RF interference and a good vantage point for VHF/UHF into the metro area and beyond.

Mt Gunjin or was that Mt Gungin? Your scribe seemingly had it wrong, so at least one party could not even find it on the map. Well we settled on Mt Gunjin, 300 odd metres above sea level (rising sea levels will not get us up here!). In the forest, with access via some rather dubious gravel roads. Roads? You gotta be kidding! Some travelled in their sedans and utes where only 4WDs

should go; it was even mentioned that one HARG member went up the power line track, in his campervan, where only trailbikes and hikers should go.

Well the advance party at least made it to the top, set up a marquee, tables and then thought...power! We need power....mains, solar, battery. We had it all. Cables snaked here, there and everywhere. Antennas went up into the trees; the generator went behind a stump and well away. Well they are noisy things, are they not? Did I say noise? It was the stuff that impinges on the ears we were thinking about. A cry came up from near the HF rig "What's all that noise, turn the genie off!" That is better. Oh, oh, a fancy, expensive 2000 VA generator and it has a HF signal all of its own. "Let's try this one" was heard. Another generator was connected up, a lesser known

brand! But what is this you hear? I did not hear anything. This genie does not have an RF signature tune. OK, now we have 240 V, well it was 240 V some of the time! Solar power...plenty of SUN in Western Australia and some nice big batteries.

We are well and truly set. The CQ calls started to go out. Responses came back, numbers? You want a number! Who is driving the laptop? Give him a 59001P someone says. HARG (Hills Amateur Radio Group) were well on their way operating the John Moyle Field Day with the call VK6AHR.

Throughout the 36 hours we had some visitors from local dirt bike cycling clubs, looking for a drink break and showing quite a bit of interest in activities. A few Perth amateurs also made the trip into the forest to observe our setup and progress. More a case of get lost and/or give the GPS unit a work out! Just as well they had 2 metre on-board to start a search and rescue mission.

Did you hear us? Many probably did, some replied. Contacts were lower than expected but we did have a good time and proved HARG can set up a field operation for HF and beyond.

Next year? I am sure we will, listen for us and give us a call, if only to say "hello" and help keep one of the clubs, the essence of AR, alive and well.

Editor's note: This story tells of one Club's participation in the 2010 John Moyle Field Day contest. Perhaps you can use it in planning how you or your club might participate this year....



Photo 2: The HARG John Moyle Field Day 2010 site

An adaptable antenna for portable operation

Henrik Stenstrom VK2HHS and Jim Ayling VK2JA



Photo 1: The VK2JA Mark 1 antenna feedpoint.

A recent group purchase organised by the Waverley Amateur Radio Society saw the acquisition of a seven metre heavy duty squid pole and matching 80 cm turf/sand spike pole holder. The intention was to use these for the construction of a portable antenna to be used on field days, holidays and the like. True to well known VK2HHS style, much procrastination took place before deciding exactly what to do with these new purchases.

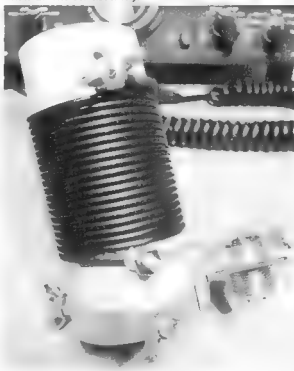
The prerequisites for the finished antenna were that it had to be uncomplicated, easy and fast to erect without special tools. It should be useable on the most favoured bands of 40 and 20 metres, preferably without a tuner and, further, it should be able to accept 100 watts PEP at a minimum.

As is often the case, inspiration for the final result in the form of a vertical antenna came from the internet. With approximately 7.5 metres to play with (pole and pole holder), a quarter wavelength vertical on 40 metres was out of the question. A quarter wavelength on 20 metres was very much achievable, with only a loading coil required to make the antenna useable on 40 metres.

The loading coil

It is worthwhile paying close attention when constructing the loading coil as in some ways it forms the heart of this antenna system. Not only does the coil form serve to hold the 40 metre loading coil itself but also serves as the feed-point, groundplane radial and vertical radiator element attachment point.

Photo 2: The coil assembly.



The former used is a piece of 45 mm nominal diameter PVC pipe 100 mm in length. A 15 mm x 3 mm aluminium strip approximately 140 mm long, bent into a roughly circular shape is attached to the coil form using three M4 screws and nuts, from the inside. This forms the groundplane radial attachment point. The SO239 connector is also attached here using a small bracket bent from scrap aluminium and suitable rivets. An additional two M4 screws form the attachment points between which the loading coil is wound and fastened.

A note on the wire used for the loading coil is required here. I used black insulated 24 x 0.2 mm – Jaycar WH3041. A little more than 2.8 metres is required to wind 20 turns on the former. Terminate an eye connector on one end, then wind the coil before cutting off the excess and terminating the other

end with another eye connector. It is worthy of note that use of wire substantially different, either plastic insulated or enamelled, may require calculation or experimentation to arrive at the correct coil inductance.

The rest...

... cannot be simpler. From suitable insulated wire, cut six radials 4.9 metres in length and terminate these in pairs with an eye connector. The six ends of the three radial pairs should be formed

into small loops using pieces of heat shrink tubing. Cut another 4.9 metre length of wire and again terminate at one end with an eye connector. This will serve as the vertical radiating element. Incidentally, I used Jaycar WH3041 throughout this project. The total requirement is 37 metres which, at \$0.40 per metre, is less than \$15 all up.

Note: For better visibility, especially after dark, the last metre of the ground plane radials could be made from yellow wire or covered with yellow heat shrink sleeving.

Setting up the antenna

Drive your pole holder into the ground and mount the squid pole. Extend the topmost section of the squid pole and temporarily attach the unterminated end of the vertical radiator with a rubber band or cable tie, leaving 10 – 15 cm loose at the top. Slide the coil assembly over the pole and attach the radiator to the 20 metre connection with the loading coil bypassed. Attach the three radial pairs and the coax feed then extend the squid pole to full length. The radials should be spaced out evenly and pegged to the ground using 'tent pegs' cut from wire coat-hangers. These groundplane radials should be insulated from their 'tent pegs'. Resist the temptation to use the radials as tight guy wires, for in anything other than the slightest of breezes, the squid pole will collapse telescopically back into itself. So leave just a little slack...you have been warned!

Using an antenna analyser or carefully applied low power RF from a mobile HF rig, trim the vertical radiator incrementally for a low/acceptable SWR at your preferred frequency of operation on 20 metres. The prototype was trimmed to 4.83 metres for a SWR of 1.2:1 at 50 ohms, at 14.2 MHz. Note that minimum SWR and 50 ohm impedance may not fall at the same frequency!



Photo 3: The antenna and coil.

When you are happy with the 20 metre SWR readings, reconfigure the antenna for 40 metres and check those. As can be seen in the photos, the original loading coil was first wound with more turns than required; this number was subsequently reduced to twenty. This gave a SWR of 1.3:1 on 40 metres initially, which was improved by slight pruning of the radiator by another 2 cm. SWR is now at or below 1.2:1 over segments of interest on both the 40 metre and 20 metre bands.

Operation on other bands is certainly possible. A tap could be added in the 40 metre loading coil for operation on 30 metres or a supplemental coil added for 80 metre use. Experimental determination of the requirements to enable this should not prove too difficult.

Proof of concept

Fellow Waverley Amateur Radio Society member Jim VK2JA

volunteered to construct a second antenna to test proof of concept and repeatability. His Mk I was put together in less than an easy afternoon's work and gained a contact into Hawaii on its first test! Following this electrically identical but mechanically simplified version, Jim advises that his Mk II is now under construction.

Performance

The prerequisites for this antenna have been well and truly met. Erecting the antenna takes less than ten minutes and performance has proven to be very good. Over the holiday break, it was taken away to VK3 and used portable in various locations. Good contacts into Japan, Italy and the Canary Islands were made on 20 metres in the late afternoons. The antenna also performed very well on 40 metres netting multiple local contacts out to 1500 km or so in the evening hours.



Photo 4: The completed antenna doing duty in the field

It all started just on 100 years ago

A review of the 100th anniversary celebrations

The Centenary Celebrations Committee

It all started just on 100 years ago when on 11 March, 1910 a meeting took place between like-minded radio enthusiasts at the Hotel Australia in Sydney.

There, a group was formed, initially known as the Institute of Wireless Telegraphy of Australia. A similar organisation took shape in Melbourne about a year later, known as the Amateur Wireless Society of Victoria. Like-minded organisations were gradually established in other Australian states, and in time these groups all became Divisions of a federated organisation known as the Wireless Institute of Australia.

Over the years, further restructuring took place. Now the national Wireless Institute of Australia, a single body continues to represent the interests of all Australian amateur radio operators.

Throughout last year, clubs, individual amateurs and the WIA celebrated *100 Years of Organised Amateur Radio in Australia* - a direct consequence of the foresight of the early experimenters in Sydney. Indeed, the formation of a determined negotiating body which finally became the Wireless Institute of Australia was probably due to the frustrations of individuals who sought permission to experiment with wireless transmission and were delayed or denied a licence by the authorities. A 'WIA' could apply a greater pressure than that possible by any individual!

So in recognition of what transpired over the past 100 years, it was considered appropriate that Centenary Celebrations were in order!

WIA Centenary Celebrations - the vision

Conceptual planning to celebrate 100 Years of Organised Amateur Radio in Australia commenced in 2008, and in April, 2009 a brief outline paper prepared by David Wardlaw and Peter Wolfenden was presented to the Board of Directors. This included a brief review of the 75th Anniversary celebrations including aspects considered applicable to any the forthcoming 100th year event; they were:

1. A **celebration** - a time for amateurs to come together, enjoy each other's company and remember their past achievements.
2. A time to gain **publicity for our hobby** and educate the public.
3. An opportunity to further **add knowledge to our history**.

The Board gave its approval and a small Centenary committee was formed, made up of individuals with experience in the areas that needed to be developed. David Wardlaw VK3ADW headed up the group as Chairman, Peter Wolfenden VK3RV undertook the history and archive research project, Jim Linton VK3PC acted as Centenary Media Officer and was responsible for much of the media aspect of our preparations, whilst Robert Broomhead VK3DN organised the promotional merchandise, website development and arrangements for the Centenary Weekend. Most issues involved the collaboration of all members of the committee.

The committee faced many challenges and hurdles, most were overcome, however a few ideas were simply not possible to implement. In the true spirit of the hobby many members stepped forward to assist the committee in a multitude of practical ways. It is true to say that these individuals are the 'unsung heroes' of the success of the year's activities - and there were hundreds of them!



Photograph taken during the IARU Region 3 meeting held in Canberra during the days leading up to the Centenary weekend of activities.

These members (and a number of non-members) really got behind the celebrations and finally made it all work so successfully. The commercial suppliers generously made available equipment and commemorative memorabilia. They also met some of the costs. Their involvement is greatly appreciated.

A detailed report of all the centenary activities would be almost impossible to achieve within the space available in this magazine article. Many activities have been reported in their own right in various articles published in *AR* over the last 12 months and we would like to acknowledge and thank the many authors for their contributions.

In this article the Centenary Committee aims to present what we feel are a number of key highlights.

Tangible results

The committee called upon the creative skills of Ivan Smith from Communiqué Graphics to undertake the development of the special Centenary logo.



The very first Centenary award issued being presented to John Fisher VK3DQ by WIA President Michael Owen VK3KI.

After viewing a number of choices Ivan had provided, the committee made its final decision and work commenced on the development of the Centenary Poster, QSL card, Centenary Award and Centenary merchandise.

One item the committee was very passionate about was the release of a commemorative postage stamp and so we were extremely disappointed when we learnt that Australia Post had not accepted our proposal to produce such a stamp. Despite the committee's best efforts and despite the fact that we completely fulfilled Australia Post's requirement criteria, regrettably we were unable to change their decision.

In October, 2009 the appearance of a news release on the WIA website announced the many activities that were being planned for the 2010 Centenary year.

Dick Smith VK2DIK giving weekend participants the story of his around the world helicopter flight.



This along with the availability of Centenary merchandise that could be purchased through the WIA's online store saw enthusiasm begin to build among members. By the end of January, 2010, the online registration form for the Canberra weekend was available via the website and within days people began registering for the weekend. The announcement that the Friday evening Telstra tower

technical tours had been confirmed and the subsequent announcement that Dick Smith had accepted our invitation to speak at the Saturday evening dinner plus the Sunday afternoon BBQ at Dick's property saw registrations simply pour in.

The WIA website played an important role in communicating information about the Centenary and developing an interest in the planned celebrations.

The January/February issue of *Amateur Radio* saw the commencement of a series of historical articles written by Peter Wolfenden. Entitled: *Arena of Wonder* (a quote from George Taylor's press release on the formation of the Institute), the articles helped to explain the early days of

organised amateur radio in Australia and provide readers with an insight to those who went before.

The release of the distinctive **Centenary poster** resulted in a lot of positive feedback from members, incorporating some fascinating imagery of early wireless experiments provided courtesy of the Waverley Amateur Radio Society. The especially themed Centenary artwork was used in a number of places during the year, including the VK100WIA QSL cards, the Centenary Award and the 2010 Call Book. The range of *Centenary Merchandise* available from the WIA became extremely popular. Vests, caps, hats, jackets, shirts and other memorabilia were sold in the hundreds. A CD *The Sounds of Amateur Radio Volume 2* was released and *The Sounds of Amateur Radio Volume 1* (1985) originally on cassette tape was re-mastered and also released on CD. Another CD containing PDF copies of *AR Magazines 1933-39* was re-issued. These CDs will be available on an ongoing basis from the WIA Bookshop.

A special callsign, **VK100WIA**, was proposed by the committee and after much discussion and correspondence with the ACMA through WIA President Michael Owen VK3KI, it was announced that the callsign would be made available to the WIA for a six month period to be used by nominated affiliated clubs. An online registration

WIA AGM weekend participants enjoying the presentation in Dick Smith's aircraft hanger (Toy Shop).





WIA President Michael Owen VK3KI making the very first VK100WIA on air contact with Geoff Atkinson VK3TL

form was placed on the website and clubs selected from the calendar a three day operating window, creating a fair and equitable way to share the callsign among the clubs.

There is little doubt that VK100WIA had a major impact on our hobby. From May to October, 2010 it was on air almost continuously, operated by over 50 clubs around Australia. The WIA website *VK100WIA online log*, recorded 24,460 contacts during this time and over 100 countries made contact with our special callsign.

The **Centenary Award** also proved popular with over 380 certificates awarded to the end of December, 2010 and further applications in January. Both VK100WIA and the Centenary Award have been very successful, resulting in the reactivation of many stations within Australia, generated a lot of interest from overseas amateurs and raised activity and interest levels within clubs.

Gaining publicity

The WIA Centenary Committee recognised the importance of creating a professional *Media Kit* available to the clubs to ensure that those engaging with the media during the year had suitable resources to draw upon. The comprehensive kit prepared by Jim Linton VK3PC, included a template media release, background sheets on amateur radio and the WIA, plus a *how-to guide for clubs*. The WIA National Office posted out these kits approximately a month before each club's rostered VK100WIA slot and followed up each club with reminder emails.

It was very pleasing to see the media releases adapted with club information appear in so many newspapers and result in radio and television interviews. Undoubtedly the level of media coverage achieved right across Australia is something we have not previously seen. Hopefully the exercise in promoting the Centenary will have a long lasting influence on the way radio clubs think about promoting themselves and amateur radio in the future.

A decision was made to appoint a **Patron** to help promote the celebrations to the general public – someone who would be able to provide a 'public face' for amateur radio. Dick Smith VK2DIK not only volunteered his services as Centenary Patron but in the ensuing Canberra AGM/Celebrations in May, 2010, opened his private flying club, museum and barbeque facilities to us. As it transpired, this was a wonderful, awe-inspiring and unforgettable experience for all of those attending the weekend in Canberra including the representatives of international radio societies.

A national formal celebration

The location, structure and timing for the **formal celebration** were major tasks. Robert VK3DN conducted much of the 'field work' with a number of visits to various locations and venues to seek out the most suitable that met our requirements. Facilities included not only the usual accommodation, dining and meeting/lecture facilities but also the requirement for a dedicated 24/7 radio room for an amateur radio station together with access to a suitable roof for antennas with access permission to mount an array of antennas. There were additional requirements for a proposed ARISS contact planned to take place during the Saturday evening dinner.

It was decided to hold the special celebrations combined with the WIA AGM in Canberra, the nation's capital, which is reasonably central to the majority of amateurs in Australia. A bonus was that the IARU Region 3 was able to schedule their Annual Directors Meeting to coincide with the celebrations thus enabling a significant international presence at our Centenary celebrations.

The vision of a **National capital event**, designed to provide a number of interests for each person attending – including partners and families, gradually crystallised. The Canberra weekend was considered by many as a real highlight of the Centenary Celebrations. The weekend was based on the format of past **WIA AGM weekend of activities**, and expanded with many other facets including an opportunity to recognise our history. The **WIA AGM weekend of activity** theme, run for a number of years, has promoted a weekend with activities of particular interest to the radio amateur, so it was a unique but fortuitous coincidence that one of Canberra's most famous technical landmarks, the **Telstra tower** was celebrating its 30th Anniversary in the same month as the WIA Canberra weekend. The technical tour of the tower became a memorable element in the weekend's program and was followed by dinner in the tower's Alto revolving restaurant with spectacular views over Canberra.

Thanks are extended to Telstra and property management for making the once-in-a-lifetime technical tours possible.

Gopal Madhavan VU2GMN, IARU Region 3 Director and President of ARSI, operating the VK100WIA station at the station set up at Rydges Hotel Canberra during the Centenary weekend of activities



During the Saturday morning the WIA conducted its **AGM** followed by the presentation of awards and the **Open Forum** which included reports on all WIA activities over the year and providing the opportunity for questions and comment from members.

The **historical presentation** held throughout the Saturday afternoon at Rydges Hotel was an outstanding success brought about by the number and quality of the guest speakers and their subject matter which ranged from history, through construction techniques, ladies in amateur radio, to an overview of future developments in communications techniques. Oh, and the cat's whisker was in there somewhere also!

The **Centenary Dinner** featured a message from the Chairman of the Australian Communications and Media Authority, Chris Chapman; the Centenary contact with the International Space Station and Dick Smith VK2DIK as keynote speaker. The evening's events went off without a hitch. Astronaut and Flight Engineer Tracy Caldwell-Dyson KF5DBF delivered a congratulatory greeting to the WIA and all attending the dinner at the commencement of the ISS contact. Tracy then answered questions from ten students from Trinity Christian School: an evening the students and their Principal, Carl Palmer VK2TP/VK1TP, will not forget for a long time!

To conclude the evening, representatives from a number of international Radio Societies delivered messages of congratulations to the WIA and gifts in recognition of the occasion.

International visitors included: Tim Ellam VE6HS President, International Amateur Radio Union, Professor Joong-Geun Rhee HL1AAQ Director IARU Region 3, Peter Lake ZL2AZ Director IARU Region 3, Gopal Madhavan VU2GMN Director IARU Region 3 and President Amateur Radio Society of India, Shizuo Endo JE1MUI Director IARU Region 3, Keigo Komuro JA1KAB representing The Japan Amateur Radio League, Isamu Kobayashi JA0AD representing the Japan Amateur Radio League, Panayot Danev LZ1US representing IARU Region 1, Roy Symon ZL2KH President NZART, Vaughn Henderson ZL1TGC

ARRL president Kay Craigie N3KN making the very last on air contact for VK100WIA with WIA President Michael Owen VK3KI.



The WIA Broadcast team conducting the very first live WIA broadcast held during the Centenary weekend of activities. At the microphones from left to right, Graham Kemp VK4BB, Phil Wait VK2ASD and Michael Owen VK3KI.

NZART Councillor and Jay Bellows K0QB International Affairs Vice President ARRL.

On Sunday morning, the weekly VK1WIA news broadcast was transmitted live from the radio room at Rydges Lakeside Hotel. Simultaneously recorded, it was also uploaded to the WIA website shortly after the broadcast concluded thereby making it available for retransmission around Australia and the world. This very 'first' live broadcast VK1WIA news was anchored by Graham Kemp VK4BB with live appearances by WIA President Michael Owen VK3KI, Vice President Ewan McLeod VK4ERM, Secretary Geoff Atkinson VK3AFA, WIA Manager Mal Brooks VK3FDSL, Director Philip Adams VK3JNI, Director Peter Young VK3MV, Director Bob Bristow VK6POP, Director Phil Wait VK2ASD and Jim Linton VK3PC representing the Centenary Committee.

Following the broadcast, the focus moved to Dick Smith's Gundaroo property, where a wonderful day was enjoyed by all.

Sincere thanks are extended to the members of the *Canberra Region Amateur Radio Club* for their assistance during the weekend and to the management and staff of Rydges Lakeside Hotel for providing the venue and meeting our somewhat unusual requirements.

Legacies of our 100th year

Whilst the formal Centenary Celebrations are now well behind us, a number of **legacies of the year** remain. Some of these are in the form of new friendships and stimuli for clubs, but there are others which are the result of the combined efforts of many people over the years.

The sorting of the many uncatalogued documents held by the Institute has enabled an **embryonic Archive to be established** at the national office in Melbourne. One early project undertaken is the scanning of all callsign listings and callbooks from 1912 onwards.

Although this is still a 'work in progress', it has already paid dividends for the Institute which can now, from searchable PDF files, relatively easily answer enquiries about licensed amateurs – usually from family historians.

Another major ongoing result of the year's celebrations is the wonderful response to the 'Call for Historical Articles' in AR. This resulted in many submissions, some of which have already been published. Other very interesting and significant articles will follow and all material will be indexed and added to our archive for use by future researchers.

We can all be part of the on-going Centenary Celebrations of Organised Amateur Radio in Australia, by contributing historical material to the WIA Archive - a true legacy of our 100th year!

Another significant on-going aspect of the celebrations is the **availability of media help**. If you have not already done so, check out the 'VK100WIA Club & Media Feedback' section on the WIA website. A request for a special media release has in the past been received from a few clubs, but most felt comfortable preparing it themselves by drawing on the media kit. Having done this for the Centenary, there is no reason why a club cannot do it again in the future - such as for the National Field Day, this year entitled 'Amateur Radio, The First Technology-based Social Network', to be held on 17 April, 2011.

Clubs are also now aware of the need to have knowledgeable, friendly and well groomed ambassadors, if possible across a wide demographic and of both genders, to give a positive first impression to any members of the public attending a club event.

Helping to raise the public profile of local radio clubs is another legacy of the Centenary celebrations.

A constructive year for amateur radio in Australia

In summary, the real significance of 2010 has been much more than the events and images. It was a very friendly and constructive year. A year when many felt proud to be a radio amateur, and proud of the WIA and what it has achieved over the years. 2010 was a year that rekindled an interest in amateur radio for many people, generating a new pride, new interest, and new enthusiasm. Long may it continue!

We sincerely appreciate the generosity of all who

contributed to make the Centenary Celebrations such an enormous success. There were many people who made it all possible - especially our Patron, Dick Smith VK2DIK, a wonderful and generous person.

It was definitely not just the work of the four committee members. At times officers of the Institute assisted the committee in the planning and implementation work. People like Michael Owen VK3KI, President, Geoff Atkinson VK3AFA, Secretary, John Longayroux VK3PZ, Treasurer, Peter Freeman VK3PF, AR Editor, and the other WIA Directors, not to forget the office staff in Bayswater!

The guest speakers at Canberra who all did a most outstanding job of their presentations, are worthy of special praise, as are the Canberra Region Amateur Radio Club members for their assistance, including the bus drivers and private car owners who helped with transporting guests. Those club members who helped so ably in providing appropriate publicity to local media and radio stations as well as the outstanding work of our own broadcast co-ordinator/announcer, Graham VK4BB and Clubs Co-ordinator Ted VK2ARA.

The efforts of local radio clubs which contributed in so many ways were major players in the year's activities. Some organised special events or re-enactments, like the Gippsland Gate Radio and Electronics Club, or the involvement with the public *Science Alive* activity in Adelaide. *Super Spring Time* in Perth was a real co-operative event involving a number of clubs. The dedication of the 'Dural Shed' in Sydney and the 'Neil Penfold Centre' in WA will provide a continuing long term focus for many amateurs. It is appropriate that these two significant facilities were opened this year. In Tasmania, Justin VK7TW also conducted multiple radio interviews publicising both amateur radio and his club's VK100WIA operation from the Domain. Many, many others contributed in a multitude of ways to their hobby and their community this year.

This list could go on and on. But the most important people of all this year are the individual radio amateurs who joined in the spirit of celebrating 100 Years of Organised Amateur Radio in Australia. Thank you all for your time and interest; it was a worth-while year!

Australia's newest Radio Club (at the time) the Macedon Ranges Amateur Radio Club operating VK100WIA from their clubrooms



Centenary Video

The *WIA Centenary Video* is being made available for purchase by members.

The high quality twin DVD boxed set includes footage from the Centenary Dinner, Historic Presentations & Sunday's visit to Dick Smith's property.

Register to reserve your copy today by simply going to the WIA website and complete the registration form under "News & Events" - "Centenary Celebrations".

My RFI experiences

James Fleming VK4TJF

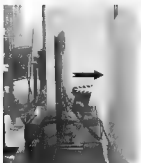


Photo 1: The TV, very close to my shack.

Hello from VK4TJF. I'm going to let you in on my RFI experiences in the hope that, unlike me, you don't have to stay up at night and think about what to do when you're causing interference and your neighbour or XYL is unhappy about it.

My RFI problems began when I started to operate HF radio. The first problem I discovered was interference into my neighbour's phone while on 20 metres SSB. Wrapping the phone line around a ferrite rod cut the interference in half. The other half was solved by giving my phone to them. Yes, all phones are *not* created equal when it comes to picking up stray RF. I could also have used some commercially made RF filters that plug into the telephone line. It seems that a few bypass capacitors could solve the telephone RFI issue, but many of the companies that manufacture the phones do not bother to have them in the phone circuitry.

After the phone issues, my other neighbour stated that I was causing interference to her speakers when I operated on 10 metres. At the time I was running 100 watts through a dipole antenna. I looked at her set up, and the speaker leads looked like the size of a perfect 10 metre antenna. So again I used some ferrite rods and wrapped the speaker leads around them; and this fixed the problem. I live very close to my neighbours in a small suburb. We all live on about 500 square metre lots, so very tight quarters.

Now we will move on to my TVI issues. I used to have an electron tube TV and used the free to air antenna to pick up a couple of channels that I could not pick up on the satellite dish. When I installed a three element Yagi on 2 metres I caused some TVI. This was solved by changing the polarization of the Yagi from horizontal to vertical and installing a 2 metre trap filter in series with the lead to the TV antenna. I could have used a piece of transmission line $1/4$ wave length long on 2 metres and open at the end. This would have provided a low impedance for the 2 metre signals and the signal would be absorbed by the transmission line and not the TV.

To combat any problems with my HF transmissions, I have a high pass TVI filter in series with the TV antenna to block the 0-30 MHz signals and pass the television signals. On my HF antenna feed line I have a low pass filter



Photo 3: The ICE Model 421 HF low-pass filter.

to pass the 0-30 MHz signals and block any higher frequency signals.

Very recently I purchased a new LCD TV and you guessed it, more TVI. First, while operating CW I was turning the TV on and off! A couple of clamp-on ferrite beads on the power cable helped with that. I put them on the power board lead that plugs into the wall and also on the power cord of the TV. Now I was still getting into the sound and visual part of the TV. So I put some clamp-on ferrites on the audio and visual leads going into the TV. I must admit that most of my problem is that my station is about one metre away from the TV. However now I can run 100 watts through a mini beam antenna, on CW, and my XYL can watch TV at the same time.

So hopefully now you know what may help! Mostly ferrite, some transmission line and perhaps a few filters.

The clamp-on ferrite beads and ferrite rods can be purchased at Jaycar Electronics.

The TV high pass filter I got from Rippittech Electronics, part number HPF-50-55.

The other filters that I have are from Industrial Communication Engineers.

The one on the TV is a model 437B, a high pass filter that is wide spectrum passing all frequencies 54-500 MHz but with a 2 metre trap for 144-148 MHz.

Between my HF transceiver and antenna is a HF lowpass filter model 421. This filter has deep notching using a Chebyshev design.



Photo 2: My two metre filter and ferrite trap.

Delta loops and Quad loops and inverted vee dipoles

Felix Scerri VK4FUQ

Although this general antenna investigation seems never-ending, I have taken off on a different tangent and in recent times have been investigating the humble Delta loop, a loop configuration that was my first 'loop' antenna way back in the middish 1980s (lots of 'interesting' memories back then). In more recent times my investigations have centred on one wavelength Quad Loops configured as a diamond shaped loop, but a number of interesting possibilities have prompted me to have another look at the equilateral Delta triangle loop. I am glad I did!

Of all the loop 'shapes', at least according to theory because of reduced enclosed area, achievable gain is lowest compared to a square or diamond loop shape by about 0.5 dB. Certainly looking out my window here in the shack the Delta loop 'looks' smaller than an equivalent diamond Quad loop, however close comparisons have not shown up any noticeable performance difference at least in terms of 'gain'. Moreover, the Delta loop has certain other advantages that the Quad or diamond loop shapes do not (more on this later).

My recent evaluations with the Delta loop have made me realise that there are other important aspects to antenna behaviour than just 'gain': radiation angle, for example. The two references at the conclusion of this article are mandatory reading in showing the possibilities afforded by specific feed point positions. My own observations are in close agreement. I have tried top feeding with horizontal polarisation (of an 'apex' up Delta triangle), along with the 'quarter wavelength' vertically polarised feed position. The effect of the different feed point positions

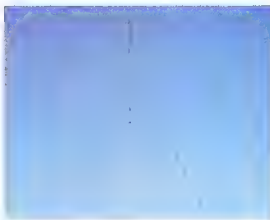


Photo 1: The inverted vee on top of the Delta loop, at their apex, and both on 20 metres.

is almost like having two different antennas in one! The difference is almost unbelievable, and in fact the amazing DX/low angle performance of the Delta loop when vertically polarised has made me realise that for working around VK, the Delta loop fed in this way, at least on 20 metres, is too 'good', at least from this QTH. Feeding at the top, giving horizontally polarised high angle radiation was much better around VK, although some observed anomalies are yet to be explained. During this test period a simple half wave inverted vee dipole was found to be the best of all for 'local' around VK working with presumably reasonably high angle horizontally polarised radiation, being at a top height of about half a wavelength.



Photo 2: The Delta loop feed point.

However on extended distance working, the Delta loop with the quarter wavelength vertically polarised feed point absolutely shines in frequently dramatic fashion. Eventually, on my pipe mast I was able to place at the top my half wave inverted vee dipole with my apex up Delta loop about 15 to 20 cm beneath and as far as I can tell, there is minimal interaction between the two antennas. It is amazing to switch between the inverted vee and Delta loop (vertically polarised), and observe the signal level difference on local and more distant signals. The inverted vee is always better on 'local' signals and the Delta loop is always better on 'DX' signals. This was the same observation when the two antennas were used separately. The best of both worlds? Yes, I think so!

As an aside, for general short wave listening the difference between the two antennas is even more apparent. Listening to the BBC World Service on the Delta loop, on 15.310 MHz (not too far away in frequency) is, most of the time, beautiful clear copy with good signal strength whereas on the inverted vee it is much poorer copy in terms of general readability and strength, and the same sort of situation exists with the time signal station WWVH from Hawaii, on 15 MHz. At the other extreme, Radio Australia from VK3, on 15.240 MHz, is much better copy on the inverted vee. By the way, all antennas 'look' in the same directions. Aren't antennas interesting? Yes!

References

1. <http://www.isy.liu.se/~mj/HAM/ANT/nabla.html>
2. <http://www.thebrowns.fsnet.co.uk/20mdelta.htm>



Amateur radio - The first technology-based social network

Philip Adams VK3JNI

WIA National Field Day

On Sunday 17 April 2011 radio clubs from around Australia will be demonstrating amateur radio to the public in prominent locations. This activity, now in its second year is the ideal opportunity to promote the hobby of amateur radio and your club to the wider community. The date selected for this year's WIA National Field Day is close to IARU World Amateur Radio Day, 18 April and it is anticipated that by aligning with World Amateur Radio Day it will provide many opportunities for interesting and newsworthy stories. The IARU have announced the theme for the 2011 World Amateur Radio Day to be "Amateur radio: The first technology-based social network". Coinciding with the IARU celebration, the WIA has therefore adopted "Amateur radio: The first technology-based social network" as the theme for the 2011 WIA National Field Day.

Rules and guidelines will be shortly published on the WIA Web site and in AR magazine.

Promoting amateur radio

Clubs are encouraged to highlight 17 April on their calendars and to start considering eye-catching locations. The event is a public relations exercise aimed at the promotion of Amateur Radio and your club. To maximise the effectiveness of your display, it is helpful to have a friendly well presented person out front of the display to greet visitors and to provide an easy to understand explanation of what is being demonstrated. You may wish to highlight or label your field day equipment, promote emergency communications preparedness, and consider promoting your club's training and assessment capabilities.



AMATEUR RADIO GETS PEOPLE TALKING

Whatever your club or group chooses to do, it is most important to plan the display in a way that engages the public.

Catching the public's attention

Colour and movement will help to attract attention. The WIA Calling CQ posters are freely available to all participating clubs and groups – perhaps consider mounting these eye catching posters around your display. Has your club the capacity to run your station on solar or wind power for the day? The safe installation of a wind generator, an array of solar panels or generator could be just the thing to attract attention.

Where to locate your display station?

An ideal location is somewhere with passing foot traffic. Consider approaching your local shopping centre for permission to set up in the car park. Does your local community have a sports complex that runs hot on Sunday? Does the date

align with a local festival or school fete? Can you encourage your local Scout group to run a sausage sizzle, just the ideal opportunity to invite the participants while they enjoy a snack? The opportunities are endless. Are you up to the challenge?

Promoting our hobby

Be sure to emphasise how much easier it is to enter the hobby through the Foundation licence. The ongoing development and education of young people through involvement in amateur radio may attract the education minded. This is your club's opportunity to recruit not only new applicants for your training courses, but also club members. Be mindful to keep explanations simple, be careful not to scare or confuse people with too much technical jargon.

The public face of amateur radio will be on display, and so too is our professionalism. Ensure the appearance of both display and coordination of people manning are

a good reflection of the hobby and of your club. The use of National Field Day branded clothing will help lift the presentation.

Excellent operating procedures and tolerance will be on display. We wish to generate as much positive public exposure (and traffic on the bands) as possible. Local repeaters, IRLP or EchoLink can play an important part in keeping something happening. A good clear signal will impress the public far more than a signal that is difficult to understand with an RS of 31. The safety of the operators and general public is critical during station setup, operation and packup. Ensure that all cabling is well secured and is not a trip hazard. Electrical safety is essential and many venues will insist that mains equipment and cabling has been tested and tagged.

Remember your audience, for young people, sound and visual activity is important. IRLP, EchoLink, Slow Scan TV, ATV, colour and movement will appeal to the younger audience. HF may be interesting,

but the noise should not dominate the activity. Radio direction finding is very popular, if you have the room to safely run it. Get people involved without being intimidating. Over the next 10 years, most of the Baby Boomers will officially retire. They will be looking for new hobbies and challenging activities to keep their minds active. Add the following generation, "Gen X's" who now are facing empty nests with a few spare dollars and a spare room at home. What an opportunity for amateur radio. Our WIA 100 Year Centenary may be interesting; our display should equally show the future.

Frequencies and modes

Frequencies and modes of operation will be in accordance with the current WIA Band plan. Clubs are invited to demonstrate technologies including SSB, Morse code, various digital techniques (such as D-STAR, Slow Scan Television, RTTY, PSK31 and WinLink), IRLP, APRS, EchoLink and even amateur radio via satellites. PC based modes will appeal to the

younger generation. Remember to keep your discussions simple.

Promotional clothing

The WIA's promotional clothing helps to create a strong bond between the many amateurs who will be participating in the event as well as draw the attention of curious prospective radio amateurs through the highly visible graphic. Hoodies, T-shirts and polos will be available in sizes Small, Medium, Large, XL, 2XL and 3XL.

Posters and banners

The WIA's Calling CQ posters and event brochures will again be made available to clubs and groups participating in the National Field Day. In addition, we will be releasing the "Amateur radio - The first technology-based social network" artwork with unique logo developed to help promote this public event.

Register Online Today

Online registration for your group and chosen venue is now available via the WIA website.





EASTERN AND MOUNTAIN DISTRICT RADIO CLUB INC.

WHITE ELEPHANT SALE

Great Ryrie Primary School
Great Ryrie Street, Heathmont
Door opens at 10:30 AM
Entry \$6.00 per head

Sunday 13 March 2011

Hundred of components, pre-loved radios, test gear, computers, software and commercial displays.

Table space \$18.00 - 6ft
\$20.00 - 8ft
Included entry for one person
For bookings call
Max VK3WT on
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or email
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Talk in on VK3REC

147.175 MHz

Soft drinks, sausage sizzle on sale.
Free tea and coffee.

WE ARE HERE


Dual Centenary plus celebrated at Ipswich

Wireless Institute of Australia Centenary & City of Ipswich 150 Years as a municipality

Michael J. Charteris VK4QS

President
Ipswich & District Radio Club
Chairman, Queensland Advisory
Comm ttee, WIA

Some months ago now, on October 31 2010, there was a gathering in the form of a BBQ, of quite some social significance. Namely, Mr. Paul Pisasale the Mayor of Ipswich, Mr. Ewan McLeod Director of the WIA, Mr. Andrew Antoniolle local Ipswich Councillor, and the members of the Ipswich & District Radio Club. The occasion for such a celebrated gathering was in fact to embrace the Centenary of the Wireless Institute of Australia with our City's milestone, the 150th Anniversary of the City of Ipswich as a municipality. A noble cause such as these events saw us embrace our City and its citizens in such a combined embodiment of both Radio and Community.

The Ipswich & District Radio Club honoured our wonderful Mayor, Mr. Paul Pisasale by inducting him into the Club as a Vice President for Life. To enlighten him as to the history of amateur radio in Queensland, the President, Michael VK4QS, presented Paul with a copy of the now legendary book, *Halcyon Days*,

by the George Taylor Medalist, Mr. Alan Shawsmith VK4SS, recently SK.

The WIA was represented on the day by Director Ewan McLeod, who kindly presented the Mayor a Centenary polo shirt, badge and hat. The Mayor enthusiastically donned the WIA uniform which can be seen in the photo supplied. In response, Paul spoke to those gathered in regards to the very special role Ipswich amateur radio operators have played in the history of Ipswich, especially in terms of community involvement and in times of disaster.

Councillor Andrew Antoniolle then spoke to those gathered, and presented a large framed Certificate of Appreciation from the Ipswich City Council to the members of our Radio Club for all their community involvement over the past 50 years. Ipswich as such first had an amateur radio club in 1924, thus covering some 86 years of history in the community. Then to the great surprise of all those present, the Mayor announced that he would be granting the Ipswich and District Radio Club a Community Donation to the sum of five thousand dollars for the purchase of new radio equipment. Well you could have heard a pin drop, followed by a resounding applause from all present.

The festivities then moved forward with a tasty BBQ, kindly cooked by our Club Secretary, Jamie Ware VK4JY, now Dr. Jamie Ware Ipswich Hospital, and the Club President's wife Lon Charteris. The day was topped off with a large chocolate cake, specially iced to reflect the significance of both anniversaries being celebrated.



Photo 1: Ipswich and District Radio Club president Michael Charteris VK4QS (left) presents Ipswich Mayor Paul Pisasale with his honorary vice president certificate and a copy of the book *Halcyon Days*.

I would like to thank all those members of the radio club involved in this very successful day. It goes without saying, that without a dedicated group of good people behind you, nothing is ever achieved. I am most fortunate in this regard to be surrounded by positively motivated community spirited amateur radio operators here at Ipswich.

For all those who have taken the time to read this article be aware that such successes can indeed be yours as well. I can only advise you all to involve yourself in your local area, embrace your local councillors, and engage them in your activities and aspiration as part of your local community. For the wider the door is open to the public, the greater the role you will play and the better your club will be for the overall results.



Photo 2: The special double celebration chocolate cake Ipswich 150 and WIA 100 years.



Photo 3: L to R. Councillor Andrew Antoniolle, President Michael Charteris VK4QS, Mayor Paul Pisasale Hon Vice President, Mr Ewan McLeod, Director WIA with the Certificate of Appreciation from Ipswich City Council to Ipswich & District Radio Club community involvement and assistance in times of disaster.

Silent Key

Phillip Mark Williams VK5NN - SK



Phil VK5NN at the WIA transmitter, Burley Griffin Building, Thebarton, July 1977.

Phil was born in Adelaide in 1922, and passed away in Adelaide on 12 December, 2010.

He was educated at Prince Alfred College, and then joined AESCO (Adelaide Electric Supply Company) for a short time, before World War II called him to the service of his country, and the beginning of a military service full of achievement in the field of radio physics generally but particularly within the area of radar systems, and their development and maintenance along the northern coast of Australia, New Guinea and throughout a number of smaller islands in the war zone.

Phil was one of the 'Bailey Boys', named as such as he trained under the leadership of Professor V.A. Bailey at Sydney University during WWII. Initially

Australia used COL radar (Chain Overseas Low Flying), English-made and very bulky and heavy units, housed in concrete structures. The modern light-weight radar equipment for the New Guinea area, made in Australia, was in contrast to the previous COL gear, and could all be man-handled. Using this new equipment, and with only a Jeep and a trailer, with practice, units were able to unpack and set up a station to be operational in 12 hours. He finished as Senior Radar Officer at Port Moresby at the end of the war, and became a Flight Lieutenant.

Phil gave three landmark talks to AHARS, in 1995 on "Antenna tuners (Z-match type)", in 1997 on "Australia's part in Radar in WWII" and in 2003 on "The Early Days of AESCO, the Adelaide Electric Supply Company, the forerunner to ETSA".

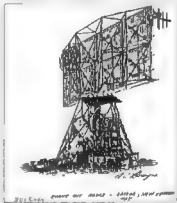
He was active in amateur radio, being one of the first to grasp the intricacies of SSB, and wrote several articles in AR, to guide fellow amateurs into using this much superior (over AM) system. In the early 1960s, Phil was the President of the South Australian Division of the WIA, and was the host to an Annual General Meeting and Conference for that organisation in Adelaide in 1964.

Phil's professional work in the Electricity Trust of South Australia was also useful to those

investigating interference to radio and television caused by power lines. He assisted the Postmaster General Department staff on many occasions with his knowledge of the fundamental reasons for the generation of such interference.

AHARS offers its condolences to his family and friends. Sources included Rob Gurr VK5RG, Ron Coat VK5RV, Phil Williams VK5NN SK, Lloyd Butler VK5BR, Peter Wolfenden VK3RV, and John Elliott VK5EMI. Further information on the amazing life of this quiet but highly gifted gentleman can be found on the AHARS website: www.ahars.com.au

Collated by John Elliott VK5EMI, Club President, Adelaide Hills Amateur Radio Society.



WIA Annual Conference

Darwin, 27th – 29th May, 2011

We strongly recommend that you book your accommodation early to avoid disappointment!

DX - News & Views

John Bazley VK4OQ
john.bazley@bigpond.com

By the time you receive this magazine the big DXpedition to the Orkney Islands will have been completed. For those readers, who like me, needed this for an all time new one, I hope that you will have managed at least one QSO!

Quite a lot is happening in the next few weeks.

Bernhard DL2GAC updates us on his operation from the **Solomon Islands**, which is on now and will end on April 12. He will have a two element 5-band beam for activity on 20, 17, 15, 12 and 10 metres and dipoles for 40 and 75 metres. It may be possible that he will install an 18 metre Spiderbeam pole for a 1.8 MHz vertical. Bernhard will be operating as H44MS using a Yaesu FT-857 along with an Ameritron ALS500M amplifier. He will be doing SSB only. Last month he received the "MixW software and MixW Rigexpert Tiny wiring device" and hopes to have it running for digital work. QSL H44MS via DL2GAC.

An international team will activate **Kanton Island** (Central Kiribati, OC-043) for nine days in mid April. An additional day may be added depending on the sailing time to the island. Transportation has been arranged, all licences are assigned and the permit is in its final stage of processing. There will be six stations, 160 through 10 (SSB, CW and RTTY). There are a few berths available on the boat. For those interested in joining the team, please contact W2IJ at kanton@t31a.com for details. A website is under construction at www.t31a.com

David 9M6/V01AU, will be on the air from **East Malaysia** March 2 to 15 including the BERTU British Commonwealth event March 12-13 and the ARRL DX SSB Contest March 5-6, when David will be single op all band high power. He also plans to be active from various QTHs in Southeast Asia the next two years. Some of the callsigns are BY1TTY,

| Dates | Call | Island (IOTA) | QSL via |
|-------------|--------|------------------------|---------|
| April 2-7 | P29VCX | Feni Island (OC-101) | SM6CVX |
| April 8-14 | P29NI | Nuguna Island (OC-257) | G3KHZ |
| April 15-18 | P29VLR | Green Island (OC-231) | SM6CVX |
| April 22-25 | P29VCX | Misima (OC-117) | SM6CVX |
| April 25-27 | P29VCX | Loloata (OC-240) | SM6CVX |

BY1RX, BY1DX, JG1RSL and VR2/V01AU. QSL them all via V01AU.

Four Dutch and one Liberian radio amateur will cooperate with the Mercy ships organization in a **Sierra Leone** operation March 15 to April 4, with the callsign 9L5MS. They will operate from Freetown. Operators are PA3A, PA8AD, EL2DT, PD0CAV and PA3AN. They plan to raise awareness of the work of Mercy Ships, raise funds for the ships' Charity Project, and activate Sierra Leone on the HF bands. <http://www.sierraleone2011.com/>

Laci OM5AM, is now QRV as D2AM from Luanda, **Angola**. He has been there since Christmas Day 2010 and expects to remain until March 17th, 2011. He began activity on 20 RTTY and SSB. Listen for Laci mostly on SSB between 14190 and 14200 but also on 80 and 40 metres. On RTTY he operates near 14.080 MHz. He is using an Auto TRX 2009 with home made OK1NOF 150 watt amp into a one element Quad and a G5RV. Some old timers will remember Laci from his 1979 D2A (ex OK3TAB) operation where he made some 27,000 QSOs when Angola was very rare. QSL via OM5AM either direct or via the OM QSL bureau.

W5FKX, N5HZ, W5XU and W5ZPA will be operating from the Signal Point contest station (PJ2T) from March 10th to 17th. They will be on HF on all modes.

Five European amateur radio operators are teaming up to do three P29 - **Papua New Guinea** IOTA counters followed by one of the team members going to two more islands! The five include SM6CVX, G3KHZ, CT1AGF, G3JKX and G3UKV.

They plan to have four stations QRV simultaneously with activity on all bands, including 6 metres on CW, SSB and RTTY. Above is the schedule. Remember the first three are with the five man team and the last two are single op trips by SM6CVX.

Any questions or requests can be sent to sm6cvx@heimstrom.se. They have a web site at www.p29ni.weebly.com

Frosty K5LBU and Wayne W5KDJ are heading back to Africa in March. Destination the Trading Post Lodge in Roma, **Lesotho** as 7P8CF and 7P8KDJ from March 11 to 20. Plans are to have two stations for activity on 1.8 through 28 MHz on CW, SSB, RTTY and PSK. For antennas they will have a T6 at about 40 feet (12 m), an R7 vertical as well as a Tennadyne TD-160, a folded dipole that is 126 feet (38.4 m) overall in length. They will have a log search after the DXpedition. QSL 7P8CF via K5LBU either direct or via LoTW. QSL 7P8KDJ via W5KDJ either direct or via LoTW and eQSL.

4A4A will be the callsign of an international team from the **Revillagigedo Archipelago** (XF4) in March of this year. The team will be lead by Marcos XE1B. Other team members include Javier EA5KM, Elmo EA5BYP, Javi EC4DX, Fernando EA5FX, Vicente EA5AFP, Santos EA4AK and John N5NTP. They will have a web site (it is currently not available) at <http://www.revillagigedo2011.com/> and will be on Twitter at <http://twitter.com/4A4A2011> QSL via EB7DX.

Continued on page 33

A poor man's single paddle lever for a Hallicrafters T O Keyer

Yves Bernier VK2AUJ

I was in need of a single lever Morse key to test and play with a Hallicrafters HA-1; a keyer circa 1960 that I had acquired. Most keys I could find were far more expensive than the keyer itself. I had the 6.3 mm (1/4") male plug already plugged in the front of the keyer, with one loose wire I was using to test the keyer.

Many earlier keys had the levels or paddles built in.

Photo 2: The paddle lever plugged into the Hallicrafter's keyer.

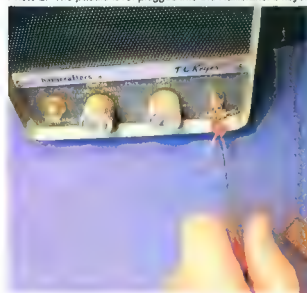


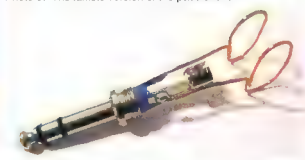
Photo 1: The 6.3 mm stereo plug single paddle lever.

The plug for the key on the HA-1 is conveniently located at the front, so I thought to myself it would be nifty and simple to install a lever onto the plug. I soldered a few PCB nuts onto the tip and ring contacts, passed a music wire through a necklace bead, which is held in place and centred by a copper wire welded to the ground.

This paddle is a bit lazy but fully adjustable.

The third photograph shows a later fully iambic version with the two paddles.

Photo 3: The iambic version of the paddle lever.



DX - News & Views

Continued from page 32

EAB - Canary Islands: Andrea EAB/IK1PMR and Claudia EAB/PA3LEO will spend their vacations January 20 through March 8 operating on 160 through 6 m. QSLs for both calls via PA3LEO, and LoTW.

FH - Mayotte: Bruno DH1BL will be living in the City of Comban, central Mayotte (AF-027) for the next three years. Currently he is active as FH4VOS and is using an FT-920 and a Spiderbeam for the five HF bands. QSL via DL7BC, direct or via bureau.

6W - Senegal / J5 - Guinea-Bissau: Peter HA3AUI is going back to Africa. He will be active in his spare time as either 6W2SC from Cabrousse, Senegal, or J5UAP from Varela,

Guinea-Bissau between February 1 and March 31. Peter plans to operate mainly CW and digital modes on 160 through 10 m. His equipment includes an Elecraft K3-Transceiver, 500 watt linear and 5-band Spiderbeam, as well as verticals. QSL via HA3AUI - direct only. His website is at <http://cqafrika.net>

Russian Callsigns. Are you confused by the new Russian calls? Most of us are, but there is an answer. Go to QRZ.com and search for RW2L. He has posted a complete list of the prefixes so you can see who is where.

And finally, my attention had been drawn to a book "Atlas of remote islands" ISBN 978 1 846 14348 9.

It covers 50 islands, and from a DX point of view, we would consider them all 'rare'! Annobon Island makes interesting reading after the sudden close down of the station there last year!

Special thanks to the authors of *The Daily DX* (W3UR, 425 DX News (11JQJ) and QRZ.DX for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of *The Daily DX* from www.dailydx.com/trial.htm

Building an 80 metre SSB kit radio

Lyle Whyatt VK5WL

This story began when I read an article in the UK magazine *Practical Wireless* (March 2009) about a kit-set from the Milton Keynes Amateur Radio Society, which is a five watt, SSB, 80 metre transceiver called the MKARS80 kit. See <http://www.mkars.org.uk/> As I was looking for something new to make I thought this would be good and would also turn back the clock to the days when all amateurs built their own equipment. The challenge was on!

The kit includes everything for the radio except a 12 volt power supply, speaker and microphone. There is power provided in the microphone input socket allowing use of an electret microphone designed for computer use. Frequency and power supply voltage are displayed on a two line digital display. The kit costs UK 50 pounds plus UK 7 pounds for pack and post which, at our current rate of exchange, means just a little over AU\$100.

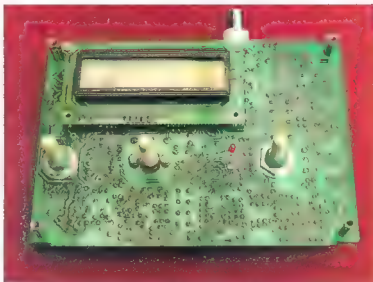


Photo 1: The solder side of the PCB including plug-in display.

Building the transceiver

The kit has a single printed circuit board to which all components, including the digital display, are fitted. Components were supplied in plastic bags numbered 1 to 4 and all pieces in each bag are fully described (including colour codes) and numbered. The printed circuit board is extremely well produced and has individual marked locations for all

components. The instructions for assembly need to be downloaded from the internet.

The fitting and soldering of all components is straightforward as all components, the diodes, resistors and capacitors, are 3 mm pigtail type, not SMD. The instruction sheet details each component to be fitted in sequence and when the component is fitted, a box beside the listing should be ticked to confirm correct installation. Because the components are small, working under a magnifying lens is recommended.

The most difficult activity is the winding of inductors and transformers, however with patience and following the precise instructions provided, this is straightforward!

Testing and finishing

The testing is straightforward, and having been fastidious with my soldering, I can confirm that everything worked as it should first time. Alignment is also straightforward, consisting basically of frequency measurement and adjusting as necessary. BFO, PA bias current, and band pass filters set-up are all straightforward without the need for sophisticated test instruments.

When all is correct, the board can be mounted in the case having first marked, drilled and cut all holes. The case drilling template is downloaded from the internet.

I modified a commercial computer microphone to include a push to talk button and this allows simple audio connection through a stereo lead.

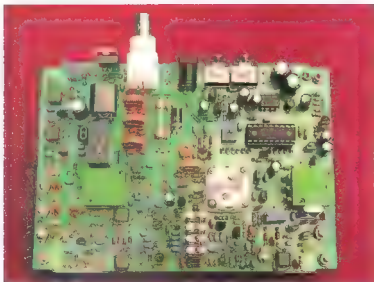


Photo 2: The component side of the PCB.

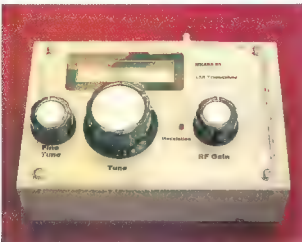


Photo 3: The completed MKARS80 kit radio.

The size of the case is 155 x 107 x 45 mm.

Test on air

My first test on air with a pre-arranged contact gave me great satisfaction as it all worked well with good reports on audio quality. The receiver sensitivity is excellent and transmission is only limited by the five watts, and efficiency of the aerial. Now an amplifier to boost the output is my next project.



Photo 4: The completed radio with microphone.

The last word belongs to MKARS. 'Firstly it should be remembered that the MKARS80 is low cost and of relatively simple design, its functionality cannot be compared with a complex commercial transceiver! That said great enjoyment can be had if its limitations are realised.'

Silent Key **Len Effenev VK4DI - SK**

On Tuesday, 1 February, 2011, Len Effenev VK4DI of Rockhampton became a silent key at the age of 83.

Len was one of the 'old guard', being licensed for approximately 65 years, throughout which time he continued his membership of the Wireless Institute of Australia. CW on the HF bands remained his passion and forte and a fellow club member described his transmissions as 'music'.

He was a family man, married to Pauline, and they had six sons and one daughter, with at least three sons obtaining amateur licences. Len worked for the railways for quite a number of years.

Several of their children completed university qualifications, quite unusual in those days and an indication of Len and Pauline's vision.

Although Len's health had failed markedly, he still attended the Queensland President's Luncheon last November where he was presented with a WIA long service medal by WIA President Michael Owen VK3KI.

Len's funeral service was held on 7 February, 2011 at St. Peter's Catholic Church, Rockhampton, prior to a private family committal. Vale Leonard William (Len) Effenev VK4DI, Silent Key.

Submitted by Les Unwin VK4VIL.

Silent Key

David Soundry VK4SM - SK

I wish to inform the amateurs of Australia of the passing of David Soundry VK4SM, who became a silent key on 30 January, 2011. He will be sadly missed by all who knew him.

Contributed by Dave Muller VK4JT.

ARISSat-1: A satellite of many names

By the time you read this, ARISSat-1 should be in orbit and bringing joy to many. This month is a look at what ARISSat-1 has to offer. Also AMSAT-UK announced they will be building a second FUNcube transponder.

A busy week

As I type this column during the last week of January, there have been some significant milestones in the life of ARISSat-1. It was mounted in the Progress M-09M cargo vehicle at Baikonur for its flight to the International Space Station. On the 28th the Progress was successfully launched and docked with the ISS. A video of the docking is available on the ARISSat website [1]. The Russian Federal Space Agency, Roscosmos, reports that the Progress delivered 2.5 tonne of propellant, oxygen, water, food, and equipment as well as "a small spacecraft named 'KEDR' that was developed to commemorate the 50th anniversary of Yuri Gagarin's space mission". The article has pictures of the rocket ready for launch [2]. The commemoration of the first manned space flight will be on April 12. KEDR was the callsign used by Gagarin during his flight. ARISSat-1's callsign will be RS1S. ARISSAT-1 is scheduled to be sent from the ISS during an EVA (Extra-Vehicular Activity or 'spacewalk') on February 16. During its time at the ISS, ARISSAT-1 will have its flight battery installed. This silver-zinc battery is the same type as used in the Russian Orlan spacesuits.

What ARISSat-1 has to offer

ARISSat-1 is the first amateur radio satellite with a software defined transponder. The 2 m downlink fits two CW beacons, a BPSK beacon, a FM beacon and a 16 kHz linear section in the space of 40 kHz. Total output power will be 500 mW with 250 mW of that for the FM beacon. According to an email from Gould

Smith WA4SXM, this should work well from an altitude of 350 km to a handheld radio with its whip antenna.

Now to look at these signals in turn. The CW-2 beacon on 145.919 MHz and CW-1 beacon on 145.939 MHz will transmit callsign (RS1S), select telemetry and the callsigns of people involved with the ARISS program. AMSAT-NA says there will be a contest to see who copies the most CW callsigns sent as there are over 200 to collect [3].

The BPSK beacon will alternately transmit spacecraft telemetry and data from the Kursk experiment. The experiment from Kursk University in Russia will measure vacuum for 90 minutes (one orbit) per day as ARISSat-1 travels through the Earth's upper atmosphere. Gould Smith reported that "The BPSK-1000 downlink is transmitted in SSB mode. It sounds like a "shussch", higher pitch than the 400 bps growl. It is difficult to tune by ear. So the CW signal was moved close to it so the CW signal could be used as a tuning signal." Users of AO-10, AO-13 and AO-40 will be familiar with the 400 bps BPSK "growl". Software should be available from the AMSAT-NA website by the time you read this to decode

the CW and BPSK-1000 for PC and Mac computers via their soundcards. The beacon can also transmit at 400 bps. The 1000 bps mode uses forward error correction for error free reception with simple antennas [4].

The FM transmissions cycle between a voice ID, select telemetry values, 24 international greeting messages in 15 languages and live SSTV images [3]. This is not a FM transponder but a beacon centred on 145.950 MHz. There are 'secret' words hidden in the greetings and awards are available for those who recognise them. ARISSat-1 has two pairs of cameras. A set of snapshots is taken every two minutes with very dark or blank pictures discarded and good pictures saved in memory. There are some pre-recorded pictures for transmission during eclipse periods. The transmission format is Robot 36 and the pictures will be in colour. During its deployment from the International Space Station there is a 15 minute safety period between the cosmonaut turning it on and the transmitter starting. In this time ARISSat-1 will take several pictures and hopefully catch a glimpse of the cosmonaut or the ISS.

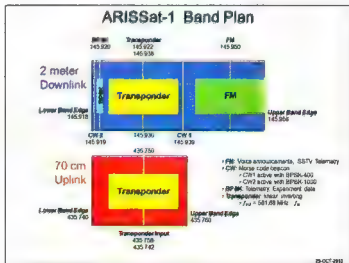


Figure 1

The safety period is to prevent interference with the cosmonaut's spacesuit.

Last but not least is the 16 kHz wide linear transponder. The uplink is centred on 435.750 MHz with the downlink centred on 145.930 MHz. It is an inverting transponder so for SSB use LSB on transmit for USB receive (same as AO-7 and VO-52). The receiver is very sensitive and should be usable with 5 watts into an omnidirectional antenna.

Figure 1 is ARISat-1's bandplan as given by AMSAT-NA. The latest version of the bandplan and current news is available from their website [3].

So what started out as Suitsat-2 became ARISat-1, RadioSkaif V, KEDR and maybe by the time you read this AMSAT-OSCAR 69. Call it what you will, but ARISat-1 should provide some interest during its short life of about a year.

A second FunCube

The UK Space Agency has announced it will build its first cubesat, UKube (UK Universal Bus Experiment),

UKube-1 will be a 3U design and will incorporate the same linear transponder as used on AMSAT-UK's FUNcube-1. UKube-1 will be used to carry up to three payloads. After sending out requests from interested organisations, the UK Space Agency received twenty proposals. Of these seven have been selected for the next round of the competition:

- Two different imagers.
- Two different electric propulsion systems.
- A set of five small experiments.
- A random number generator using radiation hits.
- Ionosphere measurement using a special GPS receiver [5].

AMSAT-UK will be busy producing two sets of boards in less than a year. As well as the flight version of UKube-1 there will be a backup version built. This backup may fly if funding is approved. The scheduled date for UKube-1's launch is 1 December 2011 and the mission will last one year. If you have ever wondered what is required for a

controlling ground station, the UK Space Agency also asked for submissions from interested groups in the UK. The basic requirements as outlined in their "Announcement For Opportunity" would be met in a well equipped amateur shack [6].

References

- [1] <http://www.amsat1.org/v3/>
- [2] <http://www.rosocosmos.ru/main.php?id=2&nid=11260> "About Progress M-09M Launch", 27/1/2011
- [3] <http://www.amsat.org/amsat-new/index.php>
- [4] Tony Monteiro and Gould Smith, "An ARISat-1 Overview" AMSAT Journal, Sep/Oct 2010
- [5] <http://www.ukspaceagency.bis.gov.uk/21973.aspx>
- [6] <http://www.ukspaceagency.bis.gov.uk/20701.aspx>

Final pass

After four years of effort by over 50 AMSAT volunteers and NASA, RSC-Energia and ARISat-1 is finally in space. Congratulations to all involved.



AMSAT-VK

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About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station,

Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net

Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via R1F on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater 146.850 MHz

VK2RIS Saddleback repeater 146.975 MHz

VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland

VK4RIL Laidley repeater on 147.700 MHz

VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia

VK5TRM, Loxton on 147.125 MHz

VK5HSC, Mt Terrible on 439.825 MHz IRLP node 6278, EchoLink node 389996

In Tasmania

VK7RTV Gawler 8 m Repeater 53.775 MHz IRLP node 6124

VK7RTV Gawler 2 m Repeater 146.775 MHz IRLP node 6616

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 5558. We are keen to have the net carried by other EchoLink or RLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM repeaters in the sky with just a dual band handheld operating on 2 m and 70 cm. These easy to use and popular FM satellites will give you national communications and handheld access to New Zealand at various times through the day and night. Should you wish to join AMSAT VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Contests

Phil Smeaton VK4BAA/VK4KW

Contest Calendar for March 2011 – May 2011

| | | | |
|-------|-------|---|-------------------|
| Mar | 5/6 | ARRL Intl. DX Contest | SSB |
| | 12/13 | RSGB Commonwealth Contest | CW |
| | 19/20 | John Moyle Field Day | CW/SSB/FM |
| | 19/21 | BARTG RTTY Contest | RTTY |
| | 19/20 | Russian DX Contest | CW/SSB |
| | 26/27 | CQWW WPX Contest | SSB |
| April | 3 | QRP Hours | CW/PSK31/RTTY/SSB |
| | 9/10 | Japan International DX Contest | CW |
| | 9/10 | Yuri Gagarin International Contest | CW |
| | 16/17 | YU DX Contest | CW/SSB |
| | 17 | WIA National Field Day | SSB |
| | 23 | Harry Angel Sprint | CW/SSB |
| | 23/24 | Helvetia Contest | CW/SSB |
| | 23/24 | SP DX RTTY Contest | RTTY |
| May | 14/15 | CQ-M International DX Contest | CW/SSB |
| | 7 | VK/Trans-Tasman 80 Metres Phone Contest | SSB |
| | 28/29 | CQ WW WPX Contest | CW |

Note: Always check contest dates prior to the contest as they are often subject to change.

Welcome to this month's Contest Column.

As I sit here frantically pressing buttons on the PC (thank heavens for spell check) Brisbane is on flood alert and the situation could be understated by being described as currently being on the far side of moist and about to get even worse over the coming days. Ipswich and Toowoomba have been particularly badly hit, with extensive flooding to many houses and businesses. Many townships are inundated with water and will, no doubt, be left with a legacy of silt / mud / whatever when the water level finally drops to normal levels.

The iconic Aussie spirit has shown itself however, with neighbour helping neighbour (as well as strangers helping others) to shift valuables into safe places and then to help clear up the muddy mess. The emergency services and other brave souls are doing battle with the torrents to save lives and safeguard property. Situations such as these bring out the best in people, but

unfortunately the worst in people also. As a contrast to the neighbourly spirit, it's a shame to see that some people of doubtful parentage have seized the opportunity to capitalise upon the grim times to help themselves to the property of others.

By the time this magazine reaches you, the clean-up will have been underway for some weeks and the full story of the disaster should be known. Further north in VK4, the waters have already claimed the houses and livelihoods of many and the rain is currently heading on its way through VK2, VK3 and there's flooding currently being reported in VK5.

Whatever happened to major areas of VK being in drought conditions? It seems so long ago.

VK6 is also going through a tough time, with reports currently coming in of crazy people deliberately starting bushfires! What are people thinking?

Hopefully, there are no radio hams suffering as a result of the carnage at the cruel hands of Mother Nature or man-made stupidity. I hope

that you and your family managed to escape the deluge and are all safe and well

CQWW 160 2010 Results

I received the results of the contest quite late, so apologies if these details are already known. VK was represented in the contest by VK6DXI with 15,960 points; VK3IO with 5,952 points and VK3TDX with 212 points. Top Band doesn't necessarily require a large amount of real estate to be effective as regards an antenna – but it sure helps! Achieving gain on LF is not a simple task – it's not as if multi-element rotatable beams are common place after all. But as always, if you can't hear them, you can't work them. Receive antenna systems don't always need to be huge to be effective and there are a few products on the market now that enable those elusive DX stations to be plucked from the band noise and static crashes. Their physical size often belies their performance, with much of the benefit of a large antenna being achieved by quite a modest footprint. 80 m can also benefit from this approach too. Maybe add a system such as this to your Santa list for later in the year? Remember though – you have to be a good boy or girl....

CQWPX SSB 2010 Results

The following VK stations (table next page) submitted a log in the WPX SSB contest in 2010.

The bands finally came alive for the majority of VK. Cycle 24 opened a myopic eye and allowed antipodean RF to reach far-flung parts of the planet.

VK was very well represented in the contest, with almost all States submitting a log to the adjudicators. VK5 operators were a tad mic-shy apparently, as no VK5 appears in the contests results. The results underline my viewpoint that VK contesting is alive and well on the world stage, as the scores and

| Call | Category | Score | QSOs | WPX |
|---------|-------------|------------|-------|-------|
| VK4KW | MULTI-TWO | 16,480,506 | 4,377 | 1,106 |
| VK1CC | MULTI-MULTI | 8,840,424 | 2,636 | 958 |
| VK7ZE | SO HP ALL | 3,635,620 | 1,638 | 740 |
| VK2APG | SO HP ALL | 2,827,968 | 1,378 | 618 |
| VK3HR | MULTI-MULTI | 1,803,776 | 973 | 512 |
| VK6NC | MULTI-ONE | 1,272,744 | 945 | 396 |
| VK6HZ | SA HP ALL | 791,056 | 675 | 392 |
| VK8PDX | SO LP ALL | 625,975 | 602 | 343 |
| VK3IO | SO HP ALL | 589,358 | 461 | 306 |
| VK2CA | SA HP ALL | 534,360 | 615 | 292 |
| VK3TDX | SO HP ALL | 511,056 | 486 | 312 |
| VK4FJ | SO LP 15M | 330,561 | 412 | 297 |
| VK4BL | SO LP ALL | 169,740 | 259 | 207 |
| VK4EJ | SO LP 15M | 168,639 | 309 | 201 |
| VK4ATH | SO LP ALL | 156,600 | 241 | 180 |
| VK4GH | SO HP ALL | 73,580 | 168 | 130 |
| VK3DXV6 | SO HP 10M | 73,502 | 175 | 143 |
| VK3TZ | SO HP ALL | 63,707 | 162 | 133 |
| VK4XES | SO LP ALL | 62,500 | 142 | 125 |
| VK4ZD | SO HP 10M | 57,360 | 174 | 120 |
| VK6FDX | SO LP ALL | 56,375 | 179 | 125 |
| VK3VTH | SO LP 40M | 54,614 | 109 | 94 |
| VK2ACC | SO HP ALL | 44,308 | 119 | 106 |
| VK3LM | SO LP ALL | 39,168 | 110 | 102 |
| VK3MDX | SO LP ALL | 31,720 | 111 | 104 |
| VK2WAR | SO HP 40M | 28,500 | 88 | 76 |
| VK7AD | SO LP 40M | 12,600 | 50 | 45 |
| VK2HBG | SO LP ALL | 10,502 | 66 | 59 |
| VK2WAY | SO LP ALL | 8,234 | 51 | 46 |
| VK6DXI | SO HP 80M | 4,557 | 39 | 31 |
| VK4HEC | SO LP ALL | 3,420 | 41 | 38 |
| VK2WTT | SO LP 20M | 3,220 | 38 | 35 |
| VK4VSP | SA LP 20M | 2,640 | 34 | 33 |
| VK2BCQ | SA HP 15M | 275 | 12 | 11 |
| VK2DXV6 | SO HP 160M | 60 | 10 | 4 |
| VK3ZGP | SO LP 40M | 6 | 1 | 1 |
| VK6WX | Checklog | | | |
| VK7XX | Checklog | | | |

'BIC' time have evidently improved over the last few years. Looking at the multiplier tally for some of the leading European stations, they are generally in the range of 1600 to 1700. VK comparatively languishes behind somewhat at 1000 or so – but geography is against us somewhat. During many of the world-wide contests, VK stations can often find that only one band is available to them for DX. In Europe, a single DX band can be worked, whilst using any other vaguely open band for more local QSOs. However, VK is quite a distance away from other countries

a bit of RF towards NA and rack-up a nice QSO and multiplier count whilst the rest of Oceania are trying to work DX only.

Station Maintenance

Summer is traditionally the time of year to blow out the cobwebs that accumulated in station systems over the winter months. With soldering iron in hand, hams can often be seen scurrying about the back garden, getting tangled-up in bits of wire and generally cussing profusely (under their breath of course) at the resulting mêlée, whilst working on their station.

so 'local' QSOs with adjacent countries don't happen. Inter-VK QSOs only count for prefix multipliers, so they'll be thin on the ground come the wee hours. So, EU stations have a nice advantage in that they can run at least one DX band whilst another operator should be able to mop-up 'local' QSOs to further augment the multiplier total. No use whinging about it though – we've just got to make the best of it! If anyone knows where the fixing bolts are that attach Hawaii to the floor then let me know – I'd put it on wheels and shuffle it to the right a little bit to get them out of the 'Oceania' category and into the 'NA' category instead. The Hawaiian stations have a nice advantage in that they're comparatively close to the NA western coastline but still count as 'Oceania'. A nice position to be in, as it's not too much of a distance to squirt

However, there is a need to be even more vigilant this 'summer'. As an aside, I find it hard to call the current VK4 weather 'summer' – summer rain and / or storms are usually active during a summer afternoon from December to March or so for example – but not for weeks on end! I digress.

With the amount of standing water that we currently have, it's not an easy task to simply walk the length of the Beverage antenna (if you're fortunate enough to have one) looking for damage from livestock or other indigenous creatures such as kangaroos, deer or even love-struck farmers perched atop tractors who should've been looking where they were going instead of driving seemingly in Braille and destroying hours of hard work. Have I digressed again? Well, maybe. I have no axe to grind. Honest.

Dropping the antenna to fix that annoying intermittent coax connection is potentially fraught with seasonal danger, as when the water level rises, the snakes are surely just in front of it trying to keep dry. Having recently emerged from slumber and feeling a tad peckish, the humble snake is likely to be ticked-off somewhat at having to search harder than usual for lunch due to the layer of water covering the likely prey. A wandering ham in a paddock or suburban back garden might unwittingly be put into a position of danger by being confronted with a hungry, wet snake. This event would surely result in an immediate underwear tainting moment, known colloquially as 'Touching Cloth' or what electricians would call a 'Brown Out'. Snakes often like to perch atop fence posts, so moving close to such a creature whilst focussing on the task at hand and not necessarily to environment around you, might result in the aforementioned 'Malteser Ejection' type of event taking place. I don't mind producing a huge log during a contest, but not otherwise! As the sergeant said at the beginning of the shift in an 80's police drama. "Hey - let's be careful out there....."

There's almost nothing more

annoying than the antenna/radio/PC/whatever suddenly developing a 'faut' whilst in the heat of contesting battle. I say "almost", as one of the most annoying I find is an aurora taking place when I'm hammering away on HF.

If I happened to be contesting on VHF it might be quite a different matter of course, but HF suddenly shutting down when I had a decent score developing in my log is no fun at all. Anyway, Murphy does indeed like to pay a call from time to time, but much can be done to try and reduce the amount of available 'fodder' for him to be naughty with by a planned approach to system maintenance and fault finding before Murphy finds it. Chores such as checking coax integrity, replacing that sometimes flickering fluorescent light tube, waterproofing the connections on the antenna, greasing the winch on the tower, checking the tightening of the bolts on the rotator – it all helps. Unless that is, you over-tighten the bolts and create a problem for yourself!

CQWPX & BERU 2011

Are you ready for the challenge of WPX CW this month? I ask somewhat tongue-in-cheek, as my CW skills are still a mite rusty and

have been cruelly described as sounding akin to a drunken goat relieving itself whilst standing on a corrugated tin roof. Oh, those other VK4KW team members can be nasty when they've been on the Boags. Anyway, their thinly veiled message is that I need to practise for the contest and then maybe have a go at spitting some RF around when the likely QSO rate is not too far out of my reach. Maybe there will be a few like-minded people who feel the same and may form an impromptu multi-two entry for 2011. Time will tell no doubt, but I find that setting yourself a few realistic goals prior to a contest help enormously. There's little point in scheduling someone with my current CW prowess commencing the contest for example, as I'll soon be swamped with callsign fever, then panic, then silently embark upon a non-snake induced 'Touching Cloth' episode when the QSO rate plummets to the floor. If I'd just taken the time to brush-up my CW skills and then target a more realistic operating period to suit my skills, underwear would not have unnecessarily been put into jeopardy and the team would not be likening my skills to the dulcet tones of a urinating cloven-hoofed quadruped adorning the shack roof.

Beru (aka Commonwealth Contest) is also taking place in March. VK will be entering a team for 2011 (no details unfortunately at the time of typing this wee ditty) but the entry is a single operator affair. No-one to hide behind for errors or whatever – they are all yours! I might be able to enter this year as the station antenna system is a bit more mature now and I can operate at my own CW speed and not feel the pressure to go faster. That's one of the fun parts of contesting – you can compete against a friend down the road, a station overseas, or just against yourself. This should be relatively easy for me in 2011, as to beat my 2010 would be a simple task of making just one QSO as I did not manage to play Beru last year. The VK team members will need your callsign in their log for the points as long as you are in a different call area to them, so have a listen and give them a call if you hear a VK callsign calling 'CQ Beru' or 'CQ CC'.

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via vk4baa@wia.org.au. See you on the bands.



John Moyle Field Day Contest 2011

Denis Johnstone (VK4AEN/VK3ZUX)

19 - 20 March, 2010
0100 UTC Sat - 0059 Sun

I wish all entrants good luck, and look forward to hearing you on air during the contest!



N.B. new email address: jmfd2011@wia.org.au will be set up close to the event for entries and you can check out latest info at <http://www.wia.org.au/contests/>

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.
2. The contest takes place on the 3rd full weekend in March each

year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 19-20 March 2011.

3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.
4. Single operator portable entries shall consist of ONE choice from each of the following (e.g. 6 hour, portable, phone, VHF/UHF):
 - a. 24 or 6 hour;

- b. Phone, CW, Digital or All modes;
 - c. HF, VHF/UHF or All Bands.
5. Multi-operator portable entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
- a. 24 or 6 hour;
 - b. Phone, CW, Digital or All modes;
 - c. HF, VHF/UHF or All Bands.
6. Home and SWL operator entries may only be either in the 24 hour or 6 hour, and only all modes, all bands.

Scoring

7. Portable HF stations shall score 2 points per QSO. CW only contacts to score 4 points per QSO for contacts with either home or portable stations. On VHF/UHF for portable stations Digital Modes score at the same rate as Phone and CW only scores at twice the rate of a Phone contact.
8. Portable stations shall score the following on 6 m:
- a. 0-49 km, 2 points per QSO;
 - b. 50-99 km, 5 points per QSO;
 - c. 100-149 km 10 points per QSO;
 - d. 150-299 km 20 points per QSO;
 - e. 300-499 km 30 points per QSO;
 - f. 500 km and greater, 2 points per QSO.
9. Portable stations shall score the following on 144 MHz and higher:
- a. 0 to 49 km, 2 points per QSO;
 - b. 50 to 99 km, 5 points per QSO;
 - c. 100 to 149 km, 10 points per QSO;
 - d. 150 to 300 km, 20 points per QSO.
 - e. 300 km and greater, 30 points per QSO.
10. For each VHF/UHF QSO where more than 2 points is claimed, either the latitude and longitude of the station contacted or other satisfactory proof of distance such as the 6-figure Maidenhead Locator must be supplied.

- 11. Home stations shall score:
 - a. Two points per QSO with each portable station.
 - b. One point per QSO with other home stations.

Log Submission

12. For each contact: UTC time, frequency, station worked, RST/serial numbers sent/received and claimed score. (VHF and above location of other station and distance showing the Lat/Long or Maidenhead Locator to 6 figures for the station worked.)
13. Logs must be accompanied by a summary sheet showing: call sign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used, and a signed declaration stating *"I hereby declare that this station was operated in accordance with the rules and spirit of the contest and that the contest manager's decision will be accepted as final"*. For multi-operator stations, the names and call signs (legible) of all operators must be listed.
14. The email address for this year's JMMFD contest should be setup a few days before the contest, and I would suggest to those that will be sending in your logs electronically, to send in a test email with the words "TEST JMMFD 2011", in the subject line and also set the "READ REQUEST RECEIPT" flag. Your call sign can then be added into the database for this year's contest. When actually submitting your log, if you do not receive an e-mail acknowledging receipt, then the log has not been received.
15. Paper logs may be posted to "John Moyle Contest Manager, 27 Laguna Ave, Kirwan 4817 QLD". Alternatively, logs may be e-mailed jmfd2011@wia.org.au, vk4ae@wia.org.au or to vk4ae@hotmail.com, or snail mailed via the WIA Contest Manager, JMMFD, P.O. Box 2042 Bayswater, VIC 3153.

16. The following formats are acceptable: Microsoft Excel or Word, ASCII text or electronic log programs such as VK Contest Log (VKCL). Logs sent by disc or e-mail must include a summary sheet and declaration, but the operator's name (legible) is acceptable in lieu of a signature. Logs must be postmarked no later than 22 April 2011.

Certificates and Trophy

17. At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in a 24 hour section are ineligible for awards in a 6 hour section.
18. The Australian portable station, with the highest overall score will be awarded the President's Cup, a perpetual trophy held at the National Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

19. General WIA contest disqualification criteria, as published in *Amateur Radio* from time to time, applies to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

20. A portable station comprises field equipment operating from a power source, e.g. batteries, portable generator, solar power, wind power, independent of any permanent facilities, which is not the normal location of any amateur station.
21. All equipment comprising the portable station must be located within an 800 m diameter circle.
22. A single operator station is where one person performs all operating, logging, and spotting functions.

23. A single operator may only use a call-sign of which he/she is the official holder. A single operator may not use a call-sign belonging to any group, club or organisation for which he/she is a sponsor except as part of a multi-operator entry.
24. A multi-operator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.
25. A multi-operator station may use only one call sign during the contest.
26. Multi-operator stations may only use one transmitter on each band at any one time, regardless of the mode in use.
27. Multi-operator stations must use a separate log for each band.
28. Logs submitted electronically can use a separate Excel worksheet for each band linked to a summary sheet. A typical example is shown at <http://www.wia.org.au/contests> which can be copied and adapted for the individual use of either a single or multi operator station.
29. A station operated by a club, group, or organisation will be considered to be multi-operator by default.
30. None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.
31. Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. The practice of clubs or groups providing massive logistic support to a single operator is, however, totally against the spirit of the contest. Offenders will be disqualified, and at the discretion of the manager, may be banned from further participation in the contest for a period of up to three years.
32. Phone includes SSB, AM and FM.
33. CW includes CW hand or computer generated. Fully automatic operation is not permitted. CW contacts will score 4 points for HF and double points for VHF & UHF contacts.
34. Digital modes such as PSK31, RTTY, and packet may be used in the contest, but if they are, they shall be classed as Digital. Other modes such as ATV may be used and will be classed as Digital for scoring. Digital contacts will score points at the same rate as Phone.
35. All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz. Note: On 50 MHz, the region below 50.150 has been declared a contest free zone, and contest CQs and exchanges may only take place above this frequency. Stations violating this rule will be disqualified.
36. Cross-band, cross-mode and contacts made via repeaters or satellites are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the contact.
37. Stations may make repeat contacts and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 0100-0359, 0400-0659, 0700-0959, 1000-1259, 1300-1559, 1600-1859, 1900-2159, 2200-0059 UTC. If you work a station at 0359 UTC a repeat contact may be made after the start of a new block providing they are not consecutive, or are separated by at least five minutes, since the previous valid contact with that station on the same band and mode.
38. Stations must exchange ciphers comprising RST() plus a 3 digit number commencing at 001 and incrementing by one for each contact.
39. Portable stations shall add the letter "P" to their own cipher, e.g. 59001P.
40. Multi-operator stations are to commence numbering on each band with 001.
41. Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.
42. The practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

If anyone wishes to contact me privately to discuss rules etc, my home phone number is (07) 4723 4229, and my snail mail and e-mail address is as shown in the Log Submission section above.



Is your Callbook current?

The WIA 2011 Callbook is now available

www.wia.org.au/bookshop



COQC QRP Hours Contest 2011

Sponsored by the CW Operators' QRP Club (COQC), the aim of the QRP Hours Contest is to make as many contacts as possible within a one-hour period using your choice of mode. While it is hoped that the event will be strongly supported by COQC members, it is open to all licensed amateur radio operators.

| | |
|------------------|--|
| Date / Time: | Saturday, 2 April 2011, 1000-1159 UTC. |
| Frequency Band: | 80 m – see Frequency / Mode Table below. |
| Category: | Single Operator. |
| Modes: | CW or PSK31 or RTTY / SSB - see Frequency / Mode Table below. |
| Power: | Preferably 5 Watts, but not more than 10 Watts average (CW/PSK31/RTTY) or PEP (SSB) at the transmitter output – this is to stress the QRP nature of the event. |
| Exchange: | A three-digit serial number starting at 001 and incrementing by one for each new contact. |
| Repeat Contacts: | No repeats – only one contact per mode per hour. |

The contest is divided into two (2) one-hour periods. Modes and frequency sub-bands are allocated to each hour as shown in the table below.

| Frequency / Mode Table | | | |
|------------------------|------------|---------------------|----------------------------|
| Hour | Time (UTC) | Mode | Frequency (MHz) |
| First Hour | 1000-1059 | CW or PSK31 or RTTY | 3.500-3.535 (CW) |
| | | | 3.620-3.630 (PSK31 / RTTY) |
| Second Hour | 1100-1159 | SSB | 3.550-3.590 |

Scoring

- Score one (1) point per contact regardless of mode.
- No multipliers apply.
- QRP stations can count contacts with QRO stations towards their final score.

Logs

- Logs must show full details for each QSO, viz. time (UTC), station worked, mode, exchange serial sent, and exchange serial received.
- A Summary Sheet showing operator's callsign, name, address and total points claimed must accompany the Log.
- The preferred method of sending the log is email, but entrants must still include their postal address as per the Summary Sheet.

- Send Logs and Summary Sheet to the Contest Manager, Mike Dower VK2IG - email: qrphours at exemail dot com dot au; or snail mail: PO Box 8013, Gundaroo, NSW, 2620.
- Emailed logs must be postmarked no later than 2359 AEST on Wednesday, 20th April, 2011; snail mailed logs must be postmarked no later than Wednesday, 20th April, 2011.
- Feel free to include information about your station and band conditions; and any comments on what you liked, what you'd like to see included or improved, etc.

Certificates will be awarded to the highest scorers in each mode in each VK State or Territory and ZL.

These rules can also be found at http://home.exetel.com.au/auriga/AR/QRP/QRP_Hours.html



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Photo 1: Steve ZL1TPH with his Multi-band Dish.

Weak Signal

The big news for the month is that the VK to ZL path on 2.4 GHz has finally been crossed. On 27 January 2011, Adrian VK4OX worked Stephen ZL1TPH/P on 2403.1 MHz SSB over a distance of 2314.5 km. Adrian is located near Caloundra while Stephen was operating portable on a hill to the west of Auckland. Details of the milestone contact can be found elsewhere in the magazine.

This contact set a new distance record of 2314.5 km. However, the record was only to stand for less than a day as the following morning Adrian worked Brian ZL1AVZ to up the record to 2317.5 km. Shortly after, John VK4JMC also worked Brian, over 2305 km.

The audio recording of the VK4OX – ZL1TPH/P contact made by Adrian is interesting listening and indicates that it was a fairly easy contact with good signal strength for some time. I suspect that contacts may have been possible on 3.4 GHz

and perhaps even 5.7 GHz. I wonder how long it will be before we bridge the gap on even higher bands?

VK9NA to ZL Microwave Contacts

Strictly, the VK4OX to ZL1TPH/P QSO was not the first VK to ZL contact on this band. It was the first mainland VK to ZL contact, but some weeks earlier, the VK9NA group worked Stephen ZL1TPH/P as he reports below:

To support the VK9NA VHF and microwave DXpedition to Norfolk Island, we drove to the top of New Zealand and operated portable out of a vehicle for the same two-week period. Two sites were chosen - Ahipara on the west coast and 838 km to Norfolk Island and Cape Reinga at the top of New Zealand and 748 km.

Our prime focus was the microwave bands from 23 cm to 3 cm with 144 MHz as liaison. Our station on VHF was 250 watts to an 8 element horizontal Yagi on 2 m.

With the microwave bands a 1.25 m diameter dish with 150 watts on 23 cm, 100 watts on 12 cm, 20 watts on 9 cm, 100 watts on 6 cm and 5 watts only on the 3 cm amateur band.

It became evident that, from either site, VK9NA were easily worked on 2 m at around S2, but the conditions only provided marginal propagation on the 23 cm band. Watching the Hepburn charts as the days went by, we saw what could be an intense inversion layer appearing on Sunday 16 January UTC at around 1800 or thereafter, with red on the Hepburn indicative of "Very Intense Propagation" between Cape Reinga up to Norfolk Island.

Arriving at Cape Reinga at 8 am, it was cloudy and misty and the humidity was extremely high with no visibility whatsoever. Initial contact on 2 m was not that strong at only S2.

We both decided to set up our respective 1.25 m dishes at each end, and then tested on 12 cm (2.4 GHz) with no success. We dropped down to 23 cm and I locked my dish on the VK9NA signal - I had lost my accurate visual bearing marker in the mist.

With tests again on 12 cm, their beeper identification was easily heard, resulting in a weak SSB contact on 2.4 GHz at 10 am NZT. We then completed a digital QSO (FSK441) with signals becoming stronger.

At around 10 am ZL time or 2100 UTC our liaison frequency on the 2 m band surprisingly went up to S9 plus. It turned out we now had a three to four hour intense temperature inversion.

We now moved up to the 5.76 GHz band. The initial received signal from VK9NA was not strong but VK9NA was easily heard at my station at around 11:30 NZT. VK9NA could not hear my return transmission on 6 cm. I swung the dish only a few degrees to the north and VK9NA were now S7 and extremely loud on 5.76 GHz. We completed on SSB and Digital (JT65C).

Once that was complete we attempted a contact on 10 GHz or the 3 cm band. No signals were heard each way, but at the time the TWTA from VK9NA was not fully operational.

We then moved back down to 3.4 GHz. The VK9NA signal was easily heard and we completed on SSB. We attempted JT65C but it was soon evident that my transverter was not stable enough for this transmission mode.

We checked the 2 m band at around 2.00 pm NZT. Signals were down to S2 and the intense opening looked to be over. We tested 10 GHz again with VK9NA now having fixed their 100 watt TWTA power amplifier, but nothing was heard either way. The intense opening to VK9NA, we believe, only lasted for around three hours that day, from 10 am to around 2 pm NZT on 17 January 2011. We both packed up our stations and I left Cape Reinga at 3 pm NZT for another 1.5 hour drive back to the Kaitia motel.

The station operators, with the VK9NA DXpedition to Norfolk Island were Alan VK3XPD, Kevin VK4UH, Michael VK3KH and Andrew VK1DA. New Zealand amateur radio operators would like to thank the VK9NA team for activating Norfolk Island once again in January 2011.

VK5 Portable Microwave Operations

In line with the VK9NA operations, Colin VK5DK, Trevor VK5NC and Les VK5JL travelled to the northern coast of NSW with the hope of working across to Norfolk Island. Colin writes:

As the plans were to have VK9NA operational from 8 January 2011, Trevor VK5NC and I left on 6 January to travel to Port Macquarie on the North Coast of NSW in an attempt to make contact from VK2 to VK9 on as many VHF/UHF/Microwave bands as possible. We chose Port Macquarie as Les VK5JL has a residence there, so it was a central location for any planned operations to VK9.

We arrived on the 7th and quickly installed our 3-element 50 MHz antenna and 10-element 144 MHz Yagis at Les VK5JL's portable QTH.

Mid afternoon on the 8th January, we were able to have a short Sporadic E contact to VK9NA plus working several VK3, VK5 and VK7 stations on 50MHz.

During the following few days we investigated several possible portable sites to give a good take-off to the north, south and east so as to be suitable for the VHF/UHF/Microwave Field Day. We checked out North Brother, which has a good take-off to the East, but no good north or south. Several locations were checked around Port Macquarie, with a possible good location found at the Tacking Point lighthouse. The problem at this location is that it is a popular scenic attraction with lots of visitors and locating portable equipment would be difficult. Crowdy Head lighthouse on the coast east of Taree was suggested and found to be quite suitable for all directions.

On Thursday afternoon 13 January starting at 0230 UTC there was a very good Sporadic E opening on 144 MHz with several states worked from our portable home location in Port Macquarie. Stations worked included: VK5JR, VK7MO, VK5ZK, VK5NY, VK5AKK, VK5GF, VK5ZBK, VK5APA, VK9NA/P, ZL3TY, VK3DUT, VK3AUU, VK5BC/P, VK5ZPS, VK5GF and VK2ZT who was on normal Tropo.

Trevor VK5NC, Les VK5JL and myself VK5DK travelled to Crowdy Head lighthouse on 15 January and with the help of Mark VK2AMS we set up for the VK VHF/UHF/Microwave Summer Field Day operations and managed 46 contacts on bands from 50 MHz up to 24 GHz in the 8 hr section. There was quite a lot of wind, which did not help operations, but contacts were made on all bands.

On Sunday 16th, from our portable location in Pt Macquarie, we were able to work Steve ZL1TPH via Sporadic E with S9 signals plus VK2IF at Kempsey also S9. Adrian VK4OX was also worked on 144 MHz from his Maleny QTH, but nothing heard when attempting a 2.4 GHz contact.

Monday 17 January we returned to Crowdy Head lighthouse in an attempt to work to VK9NA on some of the microwave bands, plus have some contacts with Matt VK2DAG.

We were able to have contacts with Matt VK2DAG over the 210 km path on all bands from 2.4 GHz to 10 GHz with good signal on all bands, 24 GHz was attempted, but with no results.

While attempting to work VK9NA, the wind tipped our 1.2 m dish over and damaged the 2.4 GHz feed beyond repair plus some damage to the dish itself, so we packed up and returned to Pt Macquarie.

Since returning home to Mt Gambier, Colin has had a number of interesting contacts. He writes:

I have resumed tests on 10 GHz with Russell VK3ZQB on a nightly sked with very good results. Also, on 23 January Rex VK7MO/p in QE48 was seen at our portable location QF02GG on 10 GHz WSJT, but no contact made. This was over a distance of over 800 km.

On Saturday morning 29 January, there were some very good S9+ signals received by Gary VK5JR and myself on 144 MHz and 432 MHz from VK7XX and VK7JG plus Karl VK7HDX mobile in Launceston was worked on his mobile with a ¼ wave whip at S2.

On Monday morning 31 January, Alan VK3XPD and myself had a 5 x 9 SSB contact on 10.368225 GHz over a distance of 380 km plus Ralph VK3WRE portable on Mt Tassie in Gippsland (QF31) a distance of 510 km was heard at S2 on SSB, but not worked.

Summer VHF/UHF Field Day

The Summer Field Day in mid January was again well patronised in the southern part of the country. Unfortunately, the disastrous floods in Queensland meant that many had much more important matters to attend to up that way.

The VK2SMC team went out to their usual location in the heart of the Snowy Mountains. David writes:

VK2SMC completed a reasonably successful Summer FD for 2011 from our usual location near Mt Selwyn (QF43GV) - at 1610 m asl. There was a weather issue leading up to the event but we were fortunate that the fog and rain cleared almost on cue,

allowing us to assemble the station on Saturday morning without any major problems.

For almost the full 24 hour duration the weather was essentially perfect with clear skies, almost no wind and mild temperatures (14 – 22 C). This was easily the best 24 hours of weather we have ever experienced at the QF43/P QTH.

Propagation was excellent too. To the west and south-west several VK5s were very audible for the entire 24 hours, which is very unusual over a continental path (floods excluded). During Saturday evening and Sunday morning we saw S9 signals from VK5 and we were eventually able to complete a 1.2 GHz contact with Phil VK5AKK, and also managed repeated 2 m and 70 cm contacts with Brian VK5BC/p - on the York peninsula. We also worked VK5 on 6 m troppo?? This sort of propagation is far from normal - but very welcome on a Field Day weekend - even if the distance does not equal points!

In total we managed to complete nearly 150 contacts on 4 bands combined, but we might have done far better on 1.2 GHz if the SSB preamp had been working. That was our only failure but it proved a crucial one - restricting the number of long haul stations worked on that band.

All in all it was a fruitful as well as enjoyable weekend, which only helps to keep the motivation factor high for next year.

Thanks to all that participated and particularly to those field stations that braved the high temperatures and high humidity at lower (normal) altitudes.

Cheers from the entire VK2SMC group - Dave, Rod and John.

We will definitely be up there again in 2012 come rain, hail, lightning or blizzards.

M'ke VK1MC had a Field Day encounter from a different perspective: I had a friend visiting Canberra from Melbourne this weekend and I did what any Canberran would do and set about showing her the local sights. In the middle of the day we decided to cruise up Mt Stromlo to take in the view and I spoke about the legacy of the 2003 bushfires on

the mountain as we cruised past the burned out telescope buildings. I decided to pop up to the laser ranging station for a look and as we hit the top I saw a bloke surrounded by bits of recalcitrant aluminium trying by himself to build a radio station.

"VHF Field Day" I thought to myself and muttered the same to my puzzled friend. "I need to go and say hello." I said. She thought I was mad, but came along for a look.

I parked the car and walked over to find Greg VK1AI attempting to juggle a mast and fiddly antennae by himself. While introducing myself I grabbed the mast and together we chatted and assembled his selection of field day equipment. I managed to undo a nut and drop it to the ground while keeping track of it in the grass and rocks then finding it again... so I didn't make anything worse. :-)

With a bit of juggling and re-jigging we got his slot-fed over and under 2 m array up there below a 6 m vertical then clamped on a wee 70 cm Yagi.

I'm still not sure how he'd have done this if I hadn't happened along at the critical moment but great respect to him for pressing on regardless. Here's what it looked like: <http://goo.gl/UvJKj>

We took a deep breath and Greg hooked up the power to the 2 m rig with a SWR meter in line. Power good. Cal good. Forward power good.

Reflected power... um... Hmmm. From my perspective, reflected power was Too Good To Be True (i.e. none) but I couldn't fault Greg's approach. He decided to "Give her a go" and immediately found Dale VK1DSH in Gundaroo. The proof of the pudding etc.

Thanks Greg for sharing your site setup with a random bloke who showed up on the mountain.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au

Digital DX Modes

Rex Moncur VK7MO

A new 2 metre Digital Record

Following the report of an almost new record in last month's AR, Derek VK6DZ and Jim VK3II completed a new 2 metre digital record on 21 January 2011 with JT65b signals up to -1 and -2 dB over a distance of 2497 km - congratulations Derek and Jim.

WSPR - report by Leigh Rainbird VK2KRR

A number of stations have begun to explore the use of K1JT's WSPR (whisper) mode on 144 MHz and more are following suit.



Photo 2: Mt Paimena QF48 station.

| Timestamp | Call | MHz | SNR | Drift | Grid | Pwr | Reporter | RGrid | km | az |
|------------------|--------|------------|-----|-------|--------|-----|----------|--------|------|-----|
| 2011-01-22 02:16 | VK6DZ | 144.145496 | -29 | 0 | QF84ux | 10 | VK5BC/P | PF85mc | 1759 | 95 |
| 2011-01-22 00:48 | VK6DZ | 144.145551 | -24 | -1 | QF84ux | 10 | VK5BC/P | PF85mc | 1759 | 95 |
| 2011-01-21 23:54 | VK6DZ | 144.145534 | +7 | -1 | QF84ux | 10 | VK5AKK | PF94ix | 1909 | 96 |
| 2011-01-16 22:52 | VK6DZ | 144.1455/1 | -25 | -2 | QF84ux | 10 | VK2KRR | QF34mr | 2657 | 96 |
| 2011-01-24 23:08 | VK2KOL | 144.145479 | -12 | 0 | QF56jf | 50 | VK5GF | PF94hk | 1130 | 256 |
| 2011-01-24 22:52 | VK2KOL | 144.145483 | -15 | -1 | QF56jf | 50 | VK5GF | PF94hk | 1130 | 256 |
| 2011-01-25 03:46 | VK5ZK | 144.145560 | -25 | -3 | QF56jf | 20 | VK2EMA | QF37qs | 872 | 68 |
| 2011-01-21 07:00 | VK3GHZ | 144.145402 | -15 | 1 | QF56jf | 5 | VK2KOL | QF56jf | 536 | 34 |

Figure 1. Sample of Data from WSPR data base.

WSPR stands for Weak Signal Propagation Reporter. WSPR implements a protocol designed for probing potential propagation paths with low-power transmissions (originally designed for HF). Normal transmissions carry a station's callsign, Maidenhead grid locator, and transmitter power in dBm. The program can decode signals with S/N as low as -28 dB in a 2500 Hz bandwidth. Stations with Internet access can automatically upload their reception reports to a central database called WSPRnet, which includes a mapping facility. The WSPR software is available from the WSJT software site <http://physics.princeton.edu/pulsar/K1JT/> and the WSPR online database site is located <http://wspmrnet.org/drupal/>

The following stations have been active using WSPR on 144 MHz during January VK2MER, 2KOL, 2KRR, 2XTT, 2EMA, 2QW, 2CDS, 2DVZ, 2BLS, 2DAG, 3SO, 3GHZ, 4LHD, 4FIL, 4VDX, 4JMC, 5GF, 5ZK, 5ACY, 5BC, 5LA, 5AKK, 6DZ and more.

Figure 1 (above) shows a sample of the data you can find online about your signal or reception of others.

When on the WSPRnet site you will find it quite interesting to analyse the data and compare 2 or more stations reception of your signal in different locations. There have been numerous surprises for a number of stations finding signal paths they were not expecting to hear, such as the VK5GF to VK2KOL path was very interesting indeed, 1130 km over the inland and mountains.

The more stations active using WSPR the more interesting the data can become. If you have your two

m SSB rig sitting idle, why not hook it up to WSPR and either let it log reception reports or you can TX also. Why not have a go? You may be surprised what you might hear or who can hear you, and have a bit of fun.

Note on WSPR Frequencies: While the above examples show the use of a dial frequency of 144.144 MHz, the Chairman of the WIA Technical Advisory Committee, after consultation, has decided that it would be more appropriate to use the international WSPR frequency of 144.489 MHz (dial frequency) in VK. This frequency is within the present beacon allocation but not on the frequency of any existing beacons. Advantages of using the international allocation are that this may open up international 2 metre DX opportunities and would also remove the possibility of mutual interference with SSB stations. The Band Plan has been amended accordingly. Under the guidance of Leigh VK2KRR, WSPR activity has now been transferred to a dial frequency of 144.489 MHz.

Mt Poimena QF48 Expedition

On the weekend of 22 and 23 January, Rex VK7MO and Joe VK7JG operated on 144, 432, 1296 and 10368 MHz to activate the rare grid square QE48 on the east coast of Tasmania. In most parts of QE48, VHF propagation is blocked to central and western VK3 and VK5 by mountains in northeast Tasmania, but Mt Poimena (see Photo 2) in the northeast corner of the grid offers the opportunity to work into these areas with an almost clear view across Bass Strait. However, there is no vehicle access to the summit and thus activation involved carrying

all the equipment over about a 800 metre track to the summit – in total Rex and Joe made 10 return trips each, about 16 km, often carrying around 20 kg of equipment – that is half a marathon each carrying equipment up a slope over rough ground – not bad for a 69 and 66 year old.

Aside from the fact that they both took off some weight, the radio results were excellent and many stations now have four new grids to their totals. The trip was planned primarily as a 10 GHz digital exercise but as it turned out the excellent take-off and some good conditions allowed most stations to be worked on SSB. In total 45 contacts were made including 11 on 10 GHz. The best distance contacts were VK5AKK 432 MHz SSB (1065 km), VK5DK 1296 MHz JT65c (725 km), VK3PY et al 10,368 MHz JT65c and SSB (469 km). The nearest miss was VK5DK on 10,368 MHz (725 km) with decades one way on JT65c.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au

The Magic Band – 6 m DX

Brian Cleland VK5BC

The 6 m band certainly lived up to its reputation as the "Magic Band" during January producing openings from VK/ZL to W, XE and KH6 as well as contacts from the eastern states to H44 and VK0 (Macquarie Is).

The first reports of US signals into Eastern Australia occurred mid morning January 11th.

In the previous few weeks ZL1 and ZL3 had made infrequent contacts with Bob K6QXY who runs a 44 element array and an EME capable station, K6MYC and N5JEH but nothing had been heard in VK, but on the morning of the 11th Norm VK3DUT worked E51CG at 0010 UTC and shortly afterwards at 0016 UTC started hearing the K6FV/b on 50.068 in Woodside California @ 519. This beacon runs 100 watts and a Yagi antenna which at the time was directed towards the South Pacific. Norm then heard W00GH on 50.115 CW, followed by weak Ws on 120, 125 etc eventually working WA7JTM, AA7A. Norm completed a great morning by working VK9NA Norfolk Is. and H44DA Solomon Is.

Steve VK3OT in Hamilton noticed the report posted on the DX Summit and VK Logger websites by Norm and on tuning the 6 m band at 0035 UTC heard the CW signals from N5JEH in New Mexico USA on 50.105 running at around 579. Despite a concentrated effort for some five or six minutes Steve could not break into this keyer, so tuned up to the US call channel on 50.125 and encountered W00GH in Gilbert Arizona DM43 calling CQ on CW and a two way contact was completed. In the USA there was linkup between west and east coast by mid winter E-skip and the appearance of VK and ZL into the USA produced a huge pileup on 50.125. Steve also worked AA7A as late as 0123 UTC and logged WA7JTM, K7TNT and W7KNT and heard N5JEH. Also Steve completed good contacts with N7CW in DM34rn, 13,850 km and also a triple hop F2 contact with K9HMB in EN52n at 15,739 km.

The above contacts are the first into USA from VK3 since Cycle 23 in the year 2000/01, remarkable considering the solar conditions with figures of B3-6 and 1.

Meanwhile up in VK4 Wade VK4WM worked the following:

Paul VK4MA worked the following stations between 0100 & 0128 UTC:

N5JEH in NM, W00GH in AZ, WA7JTM in AZ, N7IR in AZ, XE2D in Mexico, W7RV in AZ and W7XA in AZ.

Two days later on 13 January Norm VK3DUT was in the action again, this time spotting the NH6P beacon on 50.045 at 0035 Z and working KH7Y at 0056 Z. The NH6P beacon was also heard in VK2, 4, 5 & 7 and many VK2, 3 & 7s worked Fred KH7Y. KH6SX was also heard.

From New Zealand Bob ZL1RS logged the following:

01Jan2011 E51CG as far as 3 x VK6s at almost 8300 km ... not bad for 100 W/5 element stations at both ends of the path!

03Jan2011 VK9L + all mainland VK prefixes 1-8 throughout most of the day.

04Jan2011 2358 OA4TT for 1 hour signal between 529 and 559

07Jan2011 0130 K6QXY weak

10Jan2011 0027 OA4TT weak, QSO in JT65A only

10Jan2011 2333 K6QXY weak in JT65A but 20 minutes later N5JEH 559 on CW as the band really started to open at the start of the 11 Jan UTC day.

11Jan2011 The big opening to USA. There were 26 x W6, 7, 9 and 0 and 1 XE worked here between 0015 and 0135 UTC. I understand ZL2TPY heard the K6FV beacon and may have worked K6QXY?

12Jan2011 00:30 4 JAs worked at up to 579

13Jan2011 00:54 KH7Y and KH6SX worked with K6QXY between them for good measure!

14Jan2011 2336 - 0040 ZL2TPY reporting CE "muzak" on 48/49 MHz

18Jan2011 0447 - 0930 good opening from ZL1/2/3 as far as VK6 for nearly 5 hours. Station worked here including a digital QSO to VK6OX with both ends running 5 W. In fact signals were at the JT65 level "-04" and so were quite strong enough for an SSB QSO.

Shane VK4KHZ was on holidays in the Solomon Islands in early January and operated as H44DA. The 11th also proved a good day from the Solomons and Shane provided many VKs with their first H44 on 6 m, working many stations down the east coast from as far north as Cairns south to Melbourne.

As can be seen from the above 11 January was certainly an outstanding day both in VK and ZL.

Early in January Kevin VK0KEV Macquarie Island was worked by several VK3 and VK7 stations on two separate days.

The VK9NA DX expedition on Norfolk Island worked many VK/ZL stations on 13 and 14 January.

Received a note from Greg VK8GM in Alice Springs saying he is active on 6 m from the Alice and that on New Year's Day he had 38 contacts. This included 2 x ZL and all VK states except VK6 & VK8.

From a Sporadic "E" perspective there were several good days where the band opening all over VK early in January but it started to fizzle out in the third week of January with very few openings since then.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com

National Field Day

17th April, 2011

Purchase your official merchandise through our online store!

<http://www.wla.org.au/members/bookshop/index.php?cat=16>



| | | | | |
|----------|--------|----|----------|--------|
| 0120 UTC | AA7A | AZ | sent 559 | rx 559 |
| 0129 UTC | WA7JTM | AZ | sent 519 | rx 529 |
| 0137 UTC | N7RP | NM | sent 419 | rx 559 |
| 0141 UTC | W00GH | AZ | sent 419 | rx 339 |

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au

Regional Web Site: <http://east.asn.au/>

Meet the Voice BBQ 2011

Don VK7AY lets us know that Sunday March 20 is the date for this very popular VK7 event. It sees amateurs, partners and families converge on the Ross Caravan Park for a day of what radio amateurs do best – face to face communication, socialising and eating! Registration from 10 am with an 11 am chat session where you can voice your ideas and suggestions for the further development of amateur radio and in particular what can be done to improve participation in the daily 5 pm Sewing Circle Net on 3.589 MHz. Everyone will be made very welcome.

It has been AGM season in VK7 starting with NWTATVG on February 5, NTARC on February 9 and REAST on February 20. So thank goodness, club formalities should be completed by the time you are reading this report. I received email greetings from Steen OZ8SW from Broenshoej in Denmark. He let us know that a fellow radio amateur Thomas OZ1AA is cycling from Denmark to Sydney and you can follow his progress on the very professional website:

<http://www.cyclingtheglobe.com/>

A big congratulations to Rex VK7MO and Joe VK7JG who activated grid squares QE27 and QE48 over the last few months. I think we will be renaming these two the dynamic duo! The QE48 - Mt Polmena activation saw this 69 and 66 year "young" duo have to cart all the equipment over the last 800 m of the track and they each did about 16 km carrying some heavy equipment. Now that is dedication or an extreme grey-power weight loss program... HIHI. Rex and Joe were also logged working the VK9NA DXpedition using various modes. Rex even set up camp at picturesque Bicheno on Tassie's East coast for the event, dropping back home to work them on EME!



Log Periodic Array at Alanvale Campus
(Photo: Eric Ferrier).

Northern Tasmania Amateur Radio Club

NTARC meets at the Alanvale campus of The Skills Institute in Launceston. For many years this campus had a large log periodic antenna that was used by the college and amateur radio operators at this campus.

This antenna was an LP1017 and had a frequency range of 6 to 30 MHz with a boom length of 11.5 metres and was one very impressive antenna. With the changes at the campus this antenna was dismantled and the lucky recipient was Tony VK7DXX. So you can expect some serious signals from Northern VK7 in the near future.

Cradle Coast Amateur Radio Club

The CCARC New Year's Dinner at the Bass and Flinders Motel in Ulverstone was held on February 5 and by all accounts was a great show with many attending.

North West Tasmanian Amateur Television Group

There is renewed ATV activity in Ulverstone with Steve VK7ZSJ, Ross VK7WP and Tony VK7AX experimenting on 70 cm and 23 cm ATV. Thank you to Ken VK7DY who has kindly loaned some 70 and 23 cm ATV transmitting equipment and antennas for the experiments. Regular ATV transmissions on 70 cm take place with all the daily amateur radio broadcasts that usually come from VK7AX.

WICEN Tasmania (South)

WICEN have been busy over the last few months with communications support for Targa Wreast Point, the two day Tarmac rally around Southern Tasmania was held on January 29 and 30. February 6 saw communications involvement for the Hobart Run the Bridge event over the Tasman Bridge. February 18 to 20 the WICEN crew provided safety checkpoints and communications for the Portland Endurance Riders in the North East of VK7 around Pyengana and St Helens.

Radio and Electronics Association of Southern Tasmania

Congratulations to Pat Price, Angela Devine and Nicole Sweeney who all passed their Foundation licence assessments on the 22 January Foundation Training Day. We look forward to hearing you all on air.

Over the Christmas break our DATV Experimenters Nights on Wednesday were very busy with demonstrations of an optical spectrometer, demonstrations of the software and hardware for a HPSDR transceiver, time lapse films of Mt Wellington and Hobart, Australian Sky and Telescope article discussions and one special night where Patrick VK7FPJB described some of his PhD project that he is undertaking at the University of Tasmania - Computing Science department. Patrick will be back later in the year to give a presentation at one of the REAST presentation nights and we certainly look forward to that one. Want to receive digital ATV in Hobart? All you need is a directional antenna pointed toward the Queen's Domain with a reasonable amount of gain and a set-top box or TV that can tune 446.5 MHz (with 7 MHz BW). We look forward to your signal report.



YL International update

Our President Tina VK5TMC has been working hard organising the YL International Meet to be held in Adelaide in 2012. As we know how time passes swiftly, we can support Tina by making this information as widely available as possible and requesting people register their interest in attending, as it is important for planning to know how many are likely to attend.

Tina advises that: *The organization of the YL International 2012 Meet in Adelaide is almost complete. The meet dates are set with delegates arriving on or before 3 May 2012 staying at various venues in Glenelg SA. The following few days will see us tour Adelaide, Hahndorf and Cleland National Park, Port Adelaide and the Dolphin cruise plus a progressive lunch at three Barossa Valley wineries. Those that are doing the optional Ghan tour will join it for either a 7 or 9 day adventure. The 7 day option allows you to leave the tour in Alice Springs after being out to Uluru. I have created a website which is at www.ylinternational2012.com with up to date information.*

The Meet is open to any YL and their OMs interested in amateur radio. You do not have to be a member of any organization or even licensed. Most participants are active on air but that is not a requirement for attendance. If you are interested in attending please complete an expression of interest or send me an expression of interest by snail mail. My contact details are below. The list of potential participants is growing and at the moment there are 50 on the list.

I should have final prices for the Adelaide Meet about April, but the Ghan prices will not be released until June or July 2011. I know most of you cannot make a commitment until final prices are released but I do need some idea of numbers.

I hope many of you will consider

joining us for a great time in Adelaide and possibly also on the Ghan.

Anyone wishing to contact Tina Clogg can reach her by email on vk5tmc@bigpond.com or snail mail at: PO Box 78, O'Halloran Hill, SA, Australia 5158.

News from VK4

Sweers Towers Project

Lyn VK4SWE

Last August, my OM promised me a tower for my birthday, so over the Christmas period, we carried out the Tower Project! Harold VK4ANR provided a 14 m tower, Col VK4CC the Yagi, Bobby VK4PNR the rotator and we received lots of invaluable advice and help from others, too many to mention here.

Harold built an ingenious system for both tilting and raising the mast using one wire and winch. By the time we got back from our holidays, Harold had built the base section and made ingenious use of bits and pieces which he found and converted into pulleys and pivots, enabling the mast to be tilted right over into the horizontal position. My OM Tex drove the backhoe, expertly and delicately manoeuvring the lower mast section into position onto the pivot. We stood that up and waited (impatiently for the rotator to arrive. It had missed the barge in Karumba by one day, so we had to wait a whole week for it to arrive on the next one. This is one of the downsides of living on a remote tropical island!

Meanwhile Harold built the winch plate and also a special section of mast to house the rotator as the current mounting plate was not really strong enough for our "curly wind" QTH. Lyn meanwhile assembled the Yagi, carefully measuring, and re-measuring, the element lengths to best suit both SSB and CW modes. Those of you who have assembled antennas will understand why I had to throw the workshirt out when

finished - all that aluminium grease had me looking like the Tin Man from the Wizard of Oz!

At last the rotator arrived. Harold installed it, and we were then able to slide the top section of mast up inside the lower half. Next came the cables - we had fun threading them through! Then the mast on top with the CP6 attached and, finally, the Yagi - it was all starting to look seriously big.

We worked in between the rain storms which were causing floods all over Queensland. Being on a sandy island is definitely an advantage in this case. The first calm day we got, we winched the tower to its full height and ran some tests to check SWR. We were amazed at the results. The Yagi was performing even better than expected, with SWR lower than two right across all bands. It is possible the proximity of the CP6 radials are causing this, but it is a good side effect, so we are happy. The CP6 did not reciprocate at first, (my hope was it would be my omni-directional "ears" and I could turn the beam to suit). It turned out that water had gone into the traps while the CP6 was on the ground during tower construction, so I resurrected my hairdryer and we dried it out! We YL operators have our own special tools, Hi.

So now we have a 15.2 m tower, with the tip of the CP5 at about 21.3 m. All guyed safely in place but can be wound down and tilted over in the event of a cyclone. It is a credit to everyone who helped with the project. On one night I have worked Europe, South America, the U.K. - getting 59 reports on SSB. Something I never dreamed possible. Thanks to everyone involved.

VK3 news

In early January, a group of VK3 EMDRC Club members and ALARA members gathered at the Mountain View Hotel in Glen Waverley to welcome back Micheline VK3MGE and her OM Peter VK3KG from their



The VK3 ALARA group gathered at the Hastings Marina.

various travels. Together they had spent months journeying around Australia and, in Micheline's case, more recently visiting her family in Switzerland. We hope to hear from Micheline later with details of their radio use while travelling.

The evening was also a farewell to Jean VK3VIP's mother Elsie who had been visiting from New Zealand and was flying home the following day after a month's stay.

VK3 ALARA luncheon

On 29 January, the first ALARA Lunch for 2011 was held at the Hastings Marina. The weather was beautiful for a trip to the coastline, although it was not exactly an easy jaunt for some of the participants who were not familiar with the area. However, once arrived, everyone commented favourably on the location. The venue was attractive with views to the water nearby. Some of us were able to enjoy one of the day's specials which consisted of half a Lobster plus salad for \$20.00. Yum.

In all 19 people attended including a number of OMs.

The group enjoyed the lunch at Hastings.



The conversation flowed freely as it usually does on these occasions and everyone enjoyed themselves catching up with friends. After lunch everyone went outside to enjoy the scenery at the water's edge plus admiring the many boats in the Marina.

The next VK3 ALARA lunch will be held in Gisbourne on March 26. Details available from the State Representative Jean VK3VIP.

SILENT KEY: Dawn Sebbens VK4HER - 9th January 2011

Composed by Anne VK4ANN

Dawn Ward was born in Maryborough, Qld 13 April 1936, the eldest of eight children, to whom she was a "mother hen". She was raised in Bargara and worked as a piano tuner's assistant. She was married to Bill Sebbens, a primary school teacher, on 7 May 1958 in Bundaberg. The birth of their three children, Sandra, Darryl and Cheryl followed. Afterwards Bill taught in a number of schools including a one teacher school at Nondah, far NW Qld, where she helped with numerous activities. Bill entered the banking profession with the Commonwealth Bank. They were stationed in Charters Towers in the late 1960s when we first met when both OM Guy and Bill VK4XZ were in Apex.

Dawn was the Head Caterer at the Anglican Church and enjoyed oil painting. In 1969 Bill was transferred to Townsville, where Dawn was

a TAFE teacher for Leatherwork, Basketwork, Copper Tooling and Resin Crafts. She and Bill were extremely dedicated House Parents for Wee Care, a Townsville children's refuge.

After the extreme Christmas present that Cyclone Althea gave us in 1971, both of our families were without mains power for over a week, but Bill and Guy shared the use of an SES HQ generator for a few hours each at night that kept some food, stored in the freezer, cold. Our garden was a mess of destroyed vegetation, so while the boys were at SES HQ, Dawn helped me in cleaning out our yard. After a particularly difficult, stinking, hot day moving this garden wreckage out to the footpath, Dawn, together with a couple of very helpful neighbours, was offered a cold beer. To everyone's amazement, little Dawnie grabbed the stubble and downed it in virtually one gulp.

I was impressed, as I had rarely seen her drink a shandy, let alone a full strength beer!

It was during this time in Townsville, we became members of each other's extended families, spending time together caring for each other's children at times through the years.

After Bill's retirement from the Bank, they moved to Maleny and Dawn was a very active member of the Maleny Arts and Crafts group, received her Amateur licence with the call sign VK4HER and became ALARA VK4 Representative. She was also a founding member of the Friends of Ebenezer Aust. Inc, fundraising and cardmaking for sale to help provide for an orphanage in Livingstone, Southern Zambia.

Dawn was a caring, incredibly capable homemaker, who worked intensively, but stayed in the background giving Bill the opportunity to serve the community in various organisations such as Apex, Rural Fire Brigade, SES and WICEN.

We will miss her

A different sort of radio

Hans Smit VK5YX

vk5yx@tpg.com.au

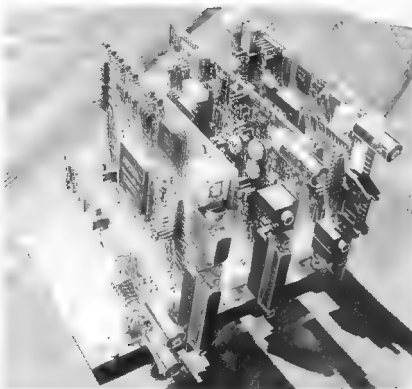


Photo 1: The hardware portion of a Software Defined Radio

Does not look much like a top notch HF/6 m all mode transceiver, does it? Well, that is because it is the hardware portion of a Software Defined Radio – SDR.

This particular SDR is a part of the 'HPSDR' project developed during the last four years by enthusiasts cooperating via the internet, employing leading edge technology. The "HP" stands for High Performance. There are no tuned RF stages, no converter, no conversion oscillator, no IF amp, IF filters, or demodulators, and there is no requirement for a sound card. Virtually all functions are executed in software in a common PC.

The Receiver – "Mercury"

Essentially an analogue to digital converter (ADC) which direct-down-converts (DDC) the 0-55 MHz signals from the antenna to a data stream presented to the PC. The actual ADC chip is an LT2208 and can be seen in the centre of the top edge. It is clocked at 122.88 MHz. There is firmware contained in the large IC. This is a Field Programmable Gate Array (FPGA). The programmed functions in this IC

'decimate' (reduce) the data stream by re-sampling to manageable proportions for input to the PC. As you can appreciate, no sound card or equivalent is involved; there is no Intermediate Frequency (IF).

The Transmitter – "Penelope"

This card does the DAC - digital to analogue conversion - function. It performs the direct-up-conversion (DUC) of a data stream from the PC to 500 mW of RF (0-55 MHz) to the antenna, or to a PA, in the reverse manner of the receiver card. All the other 'magic' is done by free, open source software called PowerSDR. It is a modified version of that used by the FlexRadio company.

The other larger card ('Ozymandias') you see in the first picture is the controller and interface to the PC USB connection. It also provides audio in-out, band information to control other devices, and so on.

The front panel of the radio is presented on the PC display, which includes a superb 'panadapter', 192 kHz wide. You control all functions with the mouse and optionally, some with the keyboard.

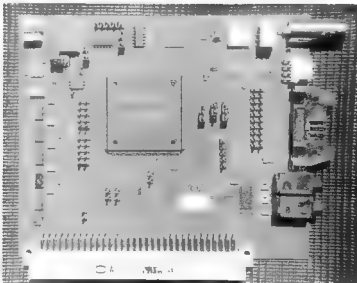


Photo 2: The receiver – "Mercury".

There is no need for physical knobs, dials or meters. For those familiar with using a mouse, that becomes easier and more intuitive than conventional controls!

The HPSDR project is described in utmost detail at this website: <http://openhpsdr.org/> - but be warned; you may spend many hours there!

My interest was kindled in 2006 by SDR articles in 'RadCom', the monthly magazine of the Radio Society of Great Britain - RSGB, presented by Phil VK6APH and Steve VK6VZ. Phil Harman is one of the key developers and made a presentation at the 2009 WIA AGM on the subject (See 'Amateur Radio' June 2009).

I started to accumulate kits and parts as they became available, and had a fully functioning transceiver in January 2009. 100 watt output was achieved by adding a surplus Codan power amplifier, including LP filters available from the Adelaide Hills club a few years ago.

Performance is better than any other transceiver I have experienced previously, and even improves with software updates from time to time! You can get some idea by reading the final HPSDR article in 'RadCom'

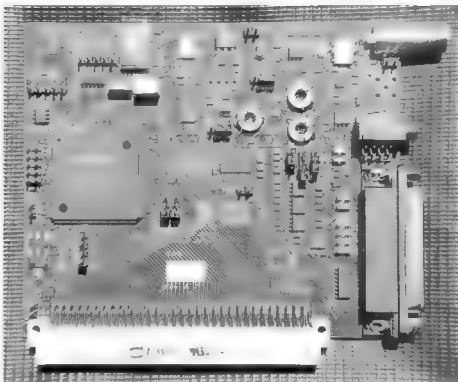


Photo 3: The transmitter - 'Penelope'.

December 2008 in which the Mercury RX is compared with an Elecraft K3. Some performance measurements are included. It is available from the RSGB website, or I can provide you with a copy via email.

The HPSDR project continues with added facilities and improvements as time progresses. I read the email reflector each day with anticipation! It's a continuing, exciting journey!



Book Review Thunderstruck

Author: Erik Larson

Crown Publisher/New York 2006

Reviewed by Lesley Smit VK5LOL

This book is must for all amateur radio enthusiasts.

Erik Larson weaves together two exciting stories in very readable prose.

He tells the life story of Guglielmo Marconi from his earliest tinkering at home with what he called "my electricity"; his transfer to England where his apparatus was destroyed as a potential bomb threat; his battle with the knowledgeable elite of the day who did not think his wireless could possibly work; to the ultimate final triumph

of transmitting a signal across the Atlantic with his spark generator. Communications would never be the same again!

Marconi's story is interspersed with a scintillating whodunnit; a Jack the Ripper type murder.

Justice is brought about through Marconi's invention.

Available as an inter-library loan in South Australia.



Hamads

FOR SALE - VIC

IC-251A FM/SSB 10 watt transceiver, in good condition, and working. Make an offer. Eddystone S770U VHF/UHF valve receiver, with manual. Needs work. Make an offer. Contact Ian VK3AQU on 03 5751 1631 AH

Two only Icom IC-22S transceivers, both with PLL faults. Free to a good home.

Homebrew receiver, using Harold Hepburn building blocks. Working. Free to a good home. Contact Ian VK3AQU on 03 5751 1631 AH.

Complete HF set-up comprising HF/50 MHz Transceiver Icom IC-736, external speaker and audio filters Icom model SP-20; SCS multimode controller model PTC-11e. Instruments come with full documentation, history, cables & where required, software. The IC-736 has had fitted FL-52A and FL-100 narrowband filters for CW work, plus a high stability crystal. Neil Duncan's review in ARA May, 1994 is included. The PTC-11e, when properly configured is capable of decoding RTTY, Morse, Packet, Fax, Pactor 1 & 11, Amtor & Fax signals. It requires a computer, (an old "clunker" with a serial port, running 95 or 98 is adequate); interfacing program NcWinPtc is supplied on a floppy. Signal & power is obtained from the receiver via cable plugging into receiver accessory plug No.1. Other RS232 cable plugs into computer serial port. NB. These are quality instruments. Full operation requires that you read the handbooks! Price \$2,000, no price debate. Contact Ken Morgan VK3CEK on 95929957 or ken3@iprimus.com.au

2 off 12 metre tapered aluminium Flagpoles, with external halyards of PVC coated stranded s/s wire rope. Supplied and installed by ABEL flagpoles on 30-1-98. Still in excellent condition. 1 off galvanized steel poles, bolted together plus Unistrut section to enable mounting to brick wall. Complete with finial and hook to hold balun of Tet Emtron ED52C multiband dipole antenna. The flagpole requires a foundation of 0.6 cubic metres of 25 MPA concrete. A block measuring say 0.7 x 0.7 x 1.2 metres. Fixing via 4 studs chemi-welded into the concrete. Price - The original installation, less antenna, cost \$4,448. Removal, intact by Abel, is priced at \$990 + GST. The owner would like to defray a reasonable amount of these costs, and would appreciate an offer. Flagpoles do not attract unwanted Council attention, & are a great replacement for trees. The installations may be viewed at 20a Sussex St. Brighton by arrangement with Ken Morgan VK3CEK on 95929957.

WANTED - NSW

Service Manual/User Manual for the RCA Victor SBA 1000 Mk2 linear amplifier (also known as MI-22805). Any material on this amplifier would be greatly appreciated, either for loan or to buy. Please contact John Bateman VK2ABA at vk2aba@wia.org.au or phone 02 6790 4028 any time.

WANTED - QLD

Copy of circuit, or the handbook, on the Yaesu external VFO Model FV107. I will reimburse cost. Contact Brad Booth VK4CDL, 48 Gregory Street, Cardwell. Qld. 4849, or at bradtimmy@hotmail.com

FOR SALE - SA

Repeater overtime. Lets you know when you have been talking long enough on the repeater. See November 2009 issue of AR magazine. Complete kit of parts with instructions, last few kits to clear. \$20 each including postage. Also available built and tested \$25 including P&P, from Elizabeth Amateur Radio Club. See <http://www.earc.org.au/articles/2009/05/repeater-over-timer/> or email vk5sq@earc.org.au

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A Centenary Recognised

A highlight of the Centenary celebrations was the good wishes extended to the WIA from across the world by many national amateur radio societies including the societies of Finland, Ireland, Kenya, Namibia and the Netherlands.

A highlight of the Centenary Dinner was the presentation of a number of significant gifts, some pictured opposite.

Icom Australia had presented every participant in the weekend with a Centenary satchel and also presented the Canberra Region Amateur Radio Club with a D-STAR repeater and at the dinner its Managing Director Takashi Aoki VK3NON presented a plaque on behalf of the founder of Icom, Tokuzo Inoue.

Gopal Madhavan VU2GMN, IARU Region 3 Director and President of ARSI presented a plaque on behalf the Indian society, Professor Joong-Guan Rhee HL1AQQ IARU Region 3 Director presented a plaque on behalf of the Korean society and Jay Bellows K0QB International Affairs Vice President presented a plaque on behalf of

the ARRL. The Radio Society of Great Britain could not directly participate, but IARU President Tim Ellam VE6SH, a RSBG member, presented a Georg Jensen silver tray on its behalf.

IARU President Tim Ellam also presented the WIA with an elegant silver watch on behalf of the International Amateur Radio Union.

Panayot Danev LZ1US IARU Region 1 Executive Committee Member, presented a plaque on behalf of IARU Region 1.

The Directors of IARU Region 3, in Canberra for their annual meeting as well as the WIA Centenary, presented signed good wishes and congratulations.

NZART President Roy Symon ZL2KH and NZART Councillor Vaughan Henderson ZL1TGC presented a plaque on behalf of the New Zealand Society. Keigo Komuro JA1KAB and Isamu Kobayashi JA0AD presented a plaque on behalf of the Japan Amateur Radio League and its President Shozo Hara.



Some of the gifts presented to the WIA at the Centenary Dinner May 2010



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